THE UNDERREPRESENTATION OF MINORITY GROUPS IN NORTH CAROLINA'S GIFTED PROGRAMS

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ABSTRACT

African American, American Indians, and Hispanic Americans have traditionally been excluded from gifted programs in the nation. In 1996, North Carolina addressed the concern of underrepresentation by passing a law, Article 9B, giving school systems greater flexibility in identification procedures. Since the implementation of Article 9B, some school systems are showing fewer gaps in representation than others. The purpose of this study is to compare identification procedures for six school systems representing small and wide gaps in minority participation to determine those characteristics that are driving greater participation for some school systems. Six school systems were divided into two groups- systems with small gaps and systems with large gaps. Comparisons were made in three ways: among systems with small gaps in representation, among systems with larger gaps in representation, and between systems with small and large gaps in representation. The results indicate that four characteristics in the identification process may encourage the inclusion of more minority students in gifted programs. They were (1) assigning more weight to some indicators of giftedness, (2) using performance as a criterion for placement, (3) using Naglieri Nonverbal Abilities test as an alternative instrument for culturally different populations, and (4) requiring one hundred eighty hours of teacher training for certification.

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DEDICATION

I would like to dedicate this thesis to my mother, the late Doris A. Marshall and my grandmother, the late Louise S. Pringle. Thank you for instilling in me the importance and value of a sound education. Thank you for always encouraging me to strive for more than was expected. Most of all, thank you for giving me the one true gift in life, unconditional love.

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INTRODUCTION

Nature of the Problem

As educators continue to strive for greater equity and student achievement in public schools, one of the many issues that must be addressed is the lack of minority representation in gifted programs.

Gifted and talented students represent one of our nation's greatest human resources, yet many students are not being identified and served in gifted programs. Those groups showing the greatest disparities are African Americans, American Indians, and Hispanic students. These groups are not represented in proportion to their population in America's schools. Passow (1972) stated that minority populations may be the country's largest untapped resource. Torrance (1977) shared this view and added that the waste or under use of the talents of the culturally different is tragic.

Educators should be concerned about the absence of certain populations in gifted programs on several levels. First, there is a positive correlation between enrollment in gifted programs and student achievement. This relationship is supported by the high performance on state tests of students who participate in AIG (gifted) programs (Darity, Castellino, Tyson, & Cobb, 2001). Therefore, the absence of certain populations in gifted programs may also be a contributing factor to the achievement gap.

Second, the practice of excluding large proportions of poor and culturally diverse students violates educational equity (Richert, 2003) and limits the opportunities of some students to reach their full potential and enhance the quality of their lives. Third, the inclusion of students from diverse populations allows all students to view the world from

multiple perspectives. In a society that is becoming increasingly diverse, the leaders of tomorrow must possess the ability to view the world from the perspective of others.

Background of the Problem

Minority populations are under represented in gifted programs with the exception of Asian Americans. Statistics taken from the 1980 and 1992 Elementary and Secondary School Civil Rights Compliance Report (Brown, 1997) show the consistent underrepresentation of African Americans, Hispanic Americans, and American Indians and the overrepresentation of Caucasians and Asian Americans in 34 of the 50 states. Ford (1995) described gifted programs as the "most segregated educational programs in the United States" (p. 52).

The 1992 Office of Civil Rights reported that 25,077,421 students were enrolled in the nation's public schools. Of that number, 40% of the national school population was American Indian, Asian American, Hispanic American, and African American (Ford, 1998). The gifted population constituted 1,412,011 students. Of the students who were identified as gifted, .5% were American Indians, 7% were Asian Americans, 7.9% were Hispanic Americans, 12.1% were African Americans, and 72.4% were Caucasian Americans (Ford, 1998). Table 1 shows the national trends in minority representation in gifted programs from 1978 to 1992. It also shows the underrepresentation of American Indians, Hispanic Americans, and African Americans as well as the overrepresentation of Asian Americans and Caucasian Americans (17%). It is important to point out that representation over this period shows a slight increase for all underrepresented groups, but the increase still falls short of their presence in the total population.

Table 1

National Trends in Minority Representation for Gifted Programs

Student Population	1978	1980	1982	1984	1992
Hispanic	6.8 5.15 (u = 25%)	9.0 5.4 (u = 40%)	8.6 4.0 (u = 53%)	13.2 7.2 (u = 45%)	13.7 7.9 (u = 42%)
American Indian	0.8 0.3 (u = 62%)	0.7 0.3 (u = 57%)	0.5 0.3 (u = 40%)	0.8 0.3 (u = 62%)	1.0 0.5 (u = 50%)
Asian	1.4 3.4 (o = 59%)	2.2 4.4 (o = 50%)	2.6 4.7 (o = 45%)	3.7 6.8 (o = 46%)	4.0 7.0 (o = 43%)
African American	15.7 10.3 (u = 33%)	20.1 11.1 (u = 45%)	25.8 11.0 (u = 57%)	24.5 12.9 (u = 47%)	21.1 12.0 (u = 41%)

Top number indicates percentage of student population; Middle number represents percentage of gifted population; “o” indicates overrepresentation; “u” indicates underrepresentation

Similar results of under representation are reported for North Carolina. According to *Education Watch*, a report prepared by the Education Trust, Inc., North Carolina's student enrollment was 1,293,638 in 2000. The breakdown by ethnicity was 31% African American, 2% Asian, 4% Hispanic, 1% American Indian, and 61% Caucasian (EdWatch Online Summary Reports, 2003). The total number of gifted students equaled 125,536. Underrepresented populations included African Americans (10%) and Hispanic (1%). Overrepresented populations were Caucasians (85%) and Asians (3%). According to this report, North Carolina is doing a better job of identifying American Indians than with other minority groups. They were proportionately identified at 1%, the same as their presence in the public schools.

Recently, the issue of underrepresentation has taken on a new life as schools and school systems in North Carolina address issues related to student achievement. North Carolina legislators directed the State Board to study underepresentation of minority and at-risk students in honors classes, advanced placement classes, and academically gifted programs to determine if underrepresentation contributes to the gap in student achievement (House Bill 1840, Section 8.28,).

The North Carolina Commission on Raising Student Achievement and Closing Gaps (First Report to the State Board of Education, 2001) also cited the need for greater minority inclusion in advance courses/programs. Recommendation Two of the report given to the North Carolina State Board urged the State "to recognize its obligation to ensure that students have an equal opportunity to learn by promoting, encouraging, and funding instructional approaches that expose minority students currently functioning at or near grade level to advance content, challenging strategies, and quality work thus

increasing the number of minority students who perform at the highest levels on standardized and end-of-grade tests" (p.7).

In July of 1996, North Carolina changed its Gifted Education law in an attempt to identify more students from underrepresented populations (North Carolina General Statue, Chapter 115C-150.5-115C-150.8, 1996). The law changed the definition of giftedness and gave school systems greater flexibility in identification procedures. The implementation of Article 9B in North Carolina has yielded very little change in the number of students identified. The question then becomes why haven't more students been identified?

Statement of the Problem

Students who participate in North Carolina's gifted programs are identified based on a set of criteria established by the school system. This thesis rests on the assumption that some school systems in North Carolina are experiencing greater success with identifying minority students for gifted programs. It is incumbent upon educators to ask why discrepancies existed and still exist despite the change in the law. The purpose of this research is to compare identification procedures for placement in six programs in North Carolina, in hopes of making recommendations toward greater inclusion and retention of underrepresented populations. Questions to be answered are:

1. What are the selection processes for systems that identify more minority students?
2. How do they differ for systems that identify fewer minority students?
3. What factors beyond the screening process support greater identification of minority students?

4. Are there characteristics that encourage more or less of a gap in representation for minority populations?

Importance of the Research

Although many educators have been concerned about the underrepresentation of certain populations in gifted education, few studies exist that address the concern. In 1991, Harris and Ford (as cited in Ford, 2002) reviewed the literature on this topic and found that fewer than 2% of the articles and scholarly publications focused on gifted minority learners. Ford conducted an Eric database search in 1998 (Ford, 1998) that revealed 8% of the articles on gifted students focused on gifted minority students.

The information gained from this research will add to a currently limited body of knowledge addressing minority populations and gifted programs. It will provide educators with strategies for identifying and retaining more students from underrepresented populations in gifted education programs.

Overview

Chapter 2 will look at the historical perspective of gifted education as a framework for the concept of giftedness. Traditional and nontraditional methods for identification of gifted students will be presented. The chapter will also discuss the impact of culture on the identification of minority populations and issues related to retaining students in gifted programs.

Chapter 3 describes the research methodology. Operational definitions for minority and underrepresented will be given. Limitations of the research design will be discussed. The process for school system selection and relevant demographic

information for those systems will be provided. The process used for gathering data and instruments used in the data gathering process will be shared.

Chapter 4 will present the findings of the research and an analysis of those findings. The questions of the research are answered in this chapter. A discussion that is linked to the literature and variables that promote or discourage the inclusion of minority students in gifted programs will be included.

Chapter 5 will include a summary of the findings and the implications of the study for policy makers, district level gifted education coordinators, school leaders, and teachers. This chapter will also discuss how curriculum can serve to develop the potential of giftedness in underserved populations. Recommendations for future research will be discussed.

REVIEW OF LITERATURE

The review of literature is intended to provide information related to underrepresentation of minority students in gifted programs. It is organized to give insight into variables that are key to proportionate representation: defining giftedness, selection processes, cultural differences, and retention issues. The chapter is divided into eight sections.

The first three sections look at the concept of giftedness as it has evolved over the years. Several definitions of giftedness including the legal definition and areas of identification recognized by the U.S. Department of Education are discussed.

Sections four and five present information related to the selection process. Traditional and nontraditional methods for identifying gifted students in the United States are described. Traditional methods include teacher nominations, parent nominations, and intelligence/achievement testing. Some examples of nontraditional methods include the use of portfolios, checklists, and case studies. Section five also describes two assessment models that are more inclusive of populations that are culturally, socially, economically, and physically challenged.

Section six of this review examines the impact of culture on identification. Cultural differences among African Americans and Native Americans that impact equitable access to gifted programs are addressed.

Issues related to keeping minority students in gifted education programs once they are identified are discussed in section seven. The section concludes with a summary of the literature reviewed in this chapter.

Historical Perspective of Giftedness/Intelligence

Throughout the history of gifted education, giftedness has been closely associated with intellectual ability. Psychologists have debated for years the idea of intelligence being born of nature versus nurture.

Plato was among the first to comment on the intellectual difference that exist among people (Baldwin & Vialle, 1999). Plato contributed the difference in intellect to heredity. He described this group as "men of gold". They were usually members of the wealthy classes.

Others shared Plato's belief of inherited intelligence. Charles Darwin also supported the idea that intelligence was a matter of nature as opposed to nurture (Eby & Smutry, 1990). He believed that these individuals were the "fittest" or most superior of each species. Frances Galton echoed this sentiment in his study *Hereditary Genius* that highlighted the hereditary links among the eminent men of his time. His use of statistical data helped to firmly establish the belief that a person's intelligence is genetically determined at birth (Baldwin & Vialle 1999).

Alfred Binet challenged Galton's theory of intelligence. He believed that intelligence could be developed (nurtured) through environmental influences (Eby & Smutry, 1990). Binet developed a series of thirty practical tasks that assessed mental functions such as memory, attention, and discrimination accompanied by practical judgment and good sense (Fancher as cited in Eby & Smutry). The tests were designed to distinguish between normal and "dull" students. Through his experimentation, Binet was able to determine the mental age at which a child was able to perform certain task. He

further suggested that with appropriate training and education, a person's mental age could be raised.

Although Binet believed in the nurture theory of intelligence, his scale was used to justify the most widely accepted theory of nature as the leading determinant of intelligence. Lewis Terman adapted and altered Binet's tasks to fit American subjects and renamed the Binet scale the Stanford-Binet Intelligence Test (Eby & Smutry, 1990). He developed a new method for arriving at mental age. This method became know as the "Intelligence Quotient". Terman determined intelligence by calculating the ratio between the mental and chronological age and multiplying the result by 100. Giftedness was now perceived as a score of 130 and above. Scoring 150 and above placed a person at the genius level. It is important to point out that all of the subjects in Terman's studies were children of white middle class families.

Charles Spearman (as cited in Baldwin & Vialle, 1999) introduced the idea of a single factor, known as the *g* factor in intelligence, which identifies the abstract reasoning power possessed by a person. This factor could be determined by genetics. Spearman's *g* factor lended further support to the nature theory.

Louis Thurston thought the IQ score was useful in predicting verbal academic achievement but fell short of predicting success in less verbal and less academic areas (Eby & Smutry, 1990). He thought that intelligence consisted of seven distinct "Primary Mental Abilities" that were independent of each other. They were verbal comprehension, word fluency, number facility, spatial visualization, associative memory, perceptual speed, and reasoning. Thurston's contribution is important for two reasons. First, it

challenged the single-score theory of intelligence. Second, Thurston's theory opens the door to the idea that giftedness is not synonymous with academic intelligence.

Guilford would expand on Thurston's theory with the "Structure of the Intellect" model of intelligence that included 150 separate ability factors (Baldwin & Vialle 1999). He stated that intelligence can be hypothesized three dimensionally in the domains of operations, products, and content.

Since the 1980's, there have been many theories of intelligence. Two of the most recognized theories are Gardner's Multiple Intelligences and Sternberg's Triarchic Theory of Intelligence (Baldwin & Vialle, 1999).

Gardner identified seven types of intelligence. They included linguistic, logic and mathematical, musical, visual and spatial conceptualization, bodily kinesthetic, interpersonal and intrapersonal. According to Gardner (Baldwin & Vialle, 1999), an intelligence is the ability to solve problems, or create products that are useful in one or more cultural settings. It is his belief that each person has the capability to develop to a certain degree in each of the areas, but development is influenced by cultural values and biological components (Bireley & Genshaft, 1991). In 1999, Gardner added two more intelligences, naturalist and spiritual (Renzulli, 2002).

Sternberg's Triarchic Theory consists of three subtheories- componential, contextual, and experiential. Componential intelligence describes learners who are analytical and abstract thinkers. These learners do well in school and on standardized tests. Contextual intelligence is the ability to achieve a "good fit" with the environment by adapting to the present environment, selecting from other environments, or shaping the environment in order to capitalize on his/her strengths. These learners are socially

competent and practical. Experiential intelligence is the ability to deal with novel kinds of tasks and situations. These learners value creativity (Bireley & Genshaft, 1991; Ford, 1995).

While there are differences in the intelligence theories of Guilford, Gardner and Sternberg, they all challenged the early ideas about how intelligence is formed. These theories supported the beliefs that intelligence is not a single or fixed trait, intelligence can be taught, intelligence is influenced by culture, and intelligence is either enhanced or hindered by the way a person interacts with the environment (Baldwin & Vialle, 1999). In short, intelligence is a product of both nature and nurture.

Defining Giftedness

Sternberg and Davidson (1986) cited sixteen different political views of the nature of giftedness. These views range from conservative to liberal views about giftedness. At the conservative end of the continuum is Lewis Terman's definition that recognizes the top 1% level in intellectual ability, as measured by the Stanford-Binet Intelligence Scale or a comparative test. At the liberal end is Paul Witty's definition that identified any child whose performance, in a potentially valuable line of human activity, is consistently remarkable.

Many experts believe that the lack of clarity in the definition of giftedness is a factor contributing to minority underrepresentation (Yancey, 1983). Sisk (as cited in Adams, 1990) believes that most definitions are broad and open to many interpretations.

The U.S. Commission of Education provided a definition for giftedness in 1972 in a document known as the Marland Report (Eby & Smutry, 1990). The Marland Report originated in response to a congressional mandate that gifted and talented children should

benefit from federal funds. The definition has been altered several times. The most recent U.S. Department of Education's definition of giftedness was written in 1993 (as cited in Renzulli, 2002; Ford, 1998).

> Children and youth with outstanding talent perform or show potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. These children and youth exhibit high performance capacity in intellectual, creative, artistic areas, or all of these; unusual leadership capacity; or ability to excel in specific academic fields. They require services or activities not ordinarily provided by the schools. Outstanding talents are present in children and youth from all cultural groups, across all economic strata, and in all areas of human endeavor. (p.26)

Ford (1995) voiced some concerns in relationship to the definition. Since states may adapt their definitions from the Department of Education's definition, some states tend to focus their searches on students who display gifts in intellectual and specific academic ability areas. Sternberg (as cited in Ford, 1995) stated that identifying students from the perspective of IQ scores only, ignores students who consistently perform poorly on paper-and-pencil tasks and other tests because of cultural bias, learning style differences, and test anxiety.

Another definition of giftedness that is cited often in the literature is Renzulli's Three-Ring Conception. Renzulli (1978, 2002) defined gifted behaviors rather than gifted individuals. He believed that gifted behavior is composed of three components/ clusters of human traits—above average ability, high levels of task commitment, and high levels of creativity. Renzulli (1978) states that it is important to point out that no single cluster makes giftedness. It is the interaction among the three that is necessary for creative/productive accomplishment. Renzulli further states that one of the major errors in identification procedures is an overemphasis on superior intellectual abilities at the expense of the other two clusters of traits (Yancey, 1983).

In August 1996, the General Assembly of North Carolina passed legislation, Article 9B, that established the purpose and definition of giftedness in the state (North Carolina General Statue, Chapter 115C-150.5, 1996). Article 9B states:

> The General Assembly believes the public schools should challenge all students to aim for academic excellence and that academically or intellectually gifted students perform or show the potential to perform at substantially high levels of accomplishment when compared with others of their age, experience, or environment. Academically or intellectually gifted students exhibit high performance capability in intellectual areas, specific academic fields, or in both intellectual areas and specific academic fields. Academically or intellectually gifted students require differentiated educational services beyond those ordinarily provided by the regular educational program. Outstanding abilities are present in students from all cultural groups, across all economic strata, and in all areas of human endeavor.

The definition recognizes gifted individuals as those possessing academic or intellectual abilities but does not recognize creative, artistic, or leadership abilities as stated in the United States definition. Also, the third component of Renzulli's gifted behaviors, task commitment, is not mentioned. The use of this definition is recommended, however school districts may add, revise, or delete portions of the definition (Gifted and Talented Education Report, 2001-2002).

Areas of Identification

According to the definition of giftedness that was set forth by the United States Office of Education (as cited in Renzull, 1978) students can be identified in six areas. They are (a) general intellectual ability, (b) specific academic aptitude, (c) creative or productive thinking, (d) leadership ability, (e) visual or performing arts, and (f) psychomotor ability. When the definition was altered in 1981, the category of psychomotor ability was deleted because it was thought that existing sports programs meet the need to develop talents in this area (Eby & Smutry, 1990).

The Office of Gifted and Talented helped to describe each area of the definition in more specific terms. According to the Office of Gifted and Talented (U.S. Department of Education, ERIC Digest #E476) general intellectual ability is defined as a high intelligence test score that is usually two standard deviations above the mean on individual and group measures. Students with general intellectual ability are said to have a wide range of general knowledge and high levels of vocabulary, memory, abstract word knowledge, and abstract reasoning. Students with specific academic aptitudes are identified by their outstanding performance on achievement or aptitude tests (typically at or above the 97th percentile) in areas such as mathematics or language arts. Creative and productive thinking is described as the ability to produce new ideas by bringing together elements that are dissimilar and the aptitude for developing new meanings that have social value. Torrance (as cited in Adams, 1990) cited creativity as one of the main strengths of minority children. Characteristics of creative and productive students include openness to experience, setting personal standards for evaluation, ability to play with ideas, willingness to take risks, preference to complexity, tolerance for ambiguity, positive self-image, and the ability to become submerged in a task. This area of giftedness is assessed through the use of creative thinking tests or creative performance. Leadership ability is defined as the ability to direct individuals or groups to a common decision or action. These students are characterized as self- confident, responsible, cooperative, a tendency to dominate, and the ability to adapt readily to new situations. Instruments that measure interpersonal skills are useful in identifying students who possess outstanding leadership ability. The area of visual and performing arts identifies

students with special talents in visual art, music drama, dance, or other related studies. Task descriptions such as the Creative Products Scales are used to identify these students.

In a report by Coleman and Gallagher (1992) on state identification policies of gifted students, results showed that the primary areas of identification were intelligence (IQ) and achievement. Forty-nine states recognized these two areas. Creativity was included by 40 states, artistic abilities by 34, leadership by 28, and psychomotor by 10. Other areas included in the report were critical thinking (15 states), psychosocial (9 states), and understanding of one's cultural heritage (4 states).

According to Article 9B (North Carolina General Statue, Chapter 115C-150.5, 1996) gifted individuals are recognized in two areas- general intellectual ability and specific academic aptitude.

Traditional Methods of Identification

Coleman and Gallagher (1992) cited teacher nominations (46 states), intelligence/achievement testing and parent nominations (45 states) as the most common methods of screening for gifted education. According to V. Hargett, (personal communication, January 12, 2004) State AIG coordinator, sources of nominations are left up to the local school system. Local school systems have the option to screen all students in the early grades (K-2) to establish a talent pool. It is also a local decision to establish a system for identifying potentially gifted students in grades three through eleven. North Carolina's screening measures may include all of the above measures as well as creativity tests, curriculum based assessments, and non-test information such as student products and work samples. Selection for participation in gifted programs may be

based on intelligence/achievement test, student products and work samples, and grades. Measures used for identification and selection are local decisions.

Teacher Nominations

There is some debate as to whether or not teachers can accurately identify gifted students. Research that was conducted by Pegnato and Birch (as cited in Ford, 1995) revealed that junior high school teachers identified many average students as gifted and failed to identify 50% of the gifted students. Jacobs (as cited in Ford, 1995) found that primary teachers could only identify 10% of the students who scored high on individual IQ tests. Cox and Daniels (as cited in Ford, 1995) reported that almost 38% of the teachers in their public school sample had unidentified gifted students in their third and fourth grade classrooms.

Areas of concern related to teacher referrals are the lack of training in gifted education, teacher preparation in testing and assessment, and teacher expectations and perceptions of minority populations.

In 1993 a national survey conducted by Archambault, Westberg, Brown, Zhang, and Emmonds (as cited in Forabach & Pierce, 1999) results showed that 61% of teachers had received no training in gifted education. Similar results were reported by Kames and Whorton (as cited in Ford, 1998) in 1991. They reported that only five states have statements of competencies for teachers of gifted education. Half of the states require no certification or endorsement in gifted education, fourteen require practicum experiences, eight require teaching experience in the regular classroom prior to teaching gifted students, and three states make training in gifted education optional. According to V. Hargett (personal communication, January 12, 2004), State AIG Coordinator, North

Carolina does not currently require teachers to be certified in gifted education. Some school systems however do elect to certify teachers. In most cases the teachers usually receive 180 clock hours of training. These results support the premise that teachers may not be qualified to recognize gifted characteristics or behavior not only in minority populations but in the majority population as well.

Frasier , Hunsaker, Lee, Finley, Frank, Garcia, and Martin (1995) conducted a survey of seven hundred fifty educators from fourteen school sites to gain insights into the perceptions educators hold regarding the problems of identifying gifted children from economically disadvantaged and limited English proficient backgrounds. Results of the survey showed that 62% thought teachers' inability to recognize indicators of potential giftedness from economically disadvantaged and limited English populations was a major barrier to identification.

Teachers are responsible for delivering services to students who are identified as gifted. For this reason, they should be familiar with the tests used to make placement decisions (Ford, 2003). However, many are not. Ford adds that the lack of knowledge about assessment issues coupled with the dynamics of race, culture and language place teachers at an disadvantage when they are required to interpret and use scores to match services to needs.

Teacher expectations of and perceptions about minority students also influence the number of students that are referred for gifted education. Maker (1996) cites several studies (McCarthy, Lynch, Wallace, & Bernally, 1991; Ruiz, 1989; Tharp & Gallimore, 1976; Tharp, 1989; Udall, 1989) that show educators and the general public have negative stereotypes and inaccurate perceptions of the abilities of children from ethnic,

cultural, and linguistic minority groups. Ford (1995) found many Black students with high achievement scores (95^{th} to 99^{th} percentile) were not in gifted programs because teachers did not refer them for screening. Even when minority students have been identified as gifted, teachers may have low expectations for them (Jenkins as cited in Ford, 1998).

Bonner (2000) states that teacher nominations are often based on the parameters of White, middle class society. Students who do not fall within these parameters often go unidentified, regardless of intellectual ability. Frasier , Hunsaker, Lee, Finley, Frank, Garcia, and Martin (1995) believe that part of the problem lies with the practice of viewing minority groups as homogeneous units with all members sharing the same set of values and beliefs and having the same characteristics. An example of this homogeneous grouping practice is assuming that all minority students are negatively affected by unstable and dysfunctional home environments. Clearly all of them are not. Many minority students have very stable and nurturing home environments.

Feshbach's 1969 study (as cited in Bonner, 2000) that looked at pupil behaviors preferred by teachers found they preferred behaviors indicating rigidity, conformity, orderliness, dependence, passivity and acquiescence rather than behaviors that indicate flexibility, nonconformity, untidiness, independence, activity, and assertiveness. Hilliard (as cited in Bonner, 2000) points out that the latter characteristics are said to describe gifted children. Teachers are more likely to refer students who are in sync with what they consider preferred behavior. As a result, they may be missing large numbers of gifted students.

Only one study has examined teacher referrals and gifted minority students (Ford, 1998). High and Udall (as cited in Ford, 1998; Kornhaber, 1999) found that teachers hold different expectations for majority and minority students. In the same study, High and Hall found that White teachers under referred African American students for gifted education programs. In another study conducted in 1989 by Burstein and Cabello (as cited in Ford, 1998), results found that 38% of student teachers believed that poor academic achievement and performance among minority students was due to cultural deficits.

Parent Nominations

Parent nomination is also one of the common methods of identifying gifted students. In 1992, Scott, Perou, Urbano, and Gold (as cited in Brown, 1997) examined the role of African American, Hispanic American, and Caucasian parents in the referral process. The study found that parents from the two minority populations referred their children less often for gifted programs even though they reported similar characteristics of gifted behavior as Caucasian parents. There are a few possible explanations for this difference. The first explanation is parents whose first language is not English may have trouble reading the forms. Another explanation, which is offered by Ford (1998), is the forms for referral are complicated and cumbersome causing some parents to overestimate or underestimate their child's ability or simply refuse to complete them. Also since giftedness is manifested differently in different cultures, the form may lack culturally specific characteristics. A third explanation is Black parents' concern that public school teachers often fail to acknowledge the giftedness within the minority student population

(Marion as cited in Ford, 1995). A final reason is minority parents may not be aware that they can nominate their children (Ford, 1998).

Intelligence (IQ)/Achievement Test

Coleman (1992) reported that all 49 states with state level policies use some form of standardized IQ and achievement tests to identify gifted students. More than 90% of school districts use intelligence or achievement test scores for decision-making (as cited in Ford, 2001). The most widely used and respected individual intelligence tests are the Stanford-Binet Intelligence Scale (S-B), and the Wechsler Intelligence Scale for Children –Revised (WISC-R) (Eby & Smutny, 1990). Other tests include the Otis-Lennon School Abilities Test, Cognitive Abilities Test, Slosson Intelligence Test-Revised, and Otis Quick Scoring Mental Abilities Test (Forsbach & Pierce, 1999). Achievement test include Woodcock- Johnson-III, Wechsler Individual Achievement, Comprehensive Tests of Basic Skills, Stanford Achievement Test, and Iowa Test of Basic Skills.

These and other tests are thought to be culturally insensitive because of their predominantly verbal construction. In 1991, Samuda, Kong, Cummins, Lewis, and Pascual-Leone (as cited in Ford, 1998; Riessman, 1962) reported that the emphasis placed on the definition of abstract words, sentences, and analogies on standardized intelligence tests, assumes a certain degree of mastery of the English language. Students whose first language is not English and students whose communication style is something other than Standard English are placed at a disadvantage.

Achievement and IQ tests that are not considered culturally sensitive have been found to be ineffective in identifying African Americans, Hispanic Americans, Indian Americans, and students from economically disadvantaged environments (Ford, 1998;

2001; Serwatka et.al., 1989). Frasier's (1995) survey of teachers' perceptions ranked test bias (70%) as the major barrier to identification. Researchers have offered several explanations. Early theories of intelligence (Darwin, Galton, Spearman) defended the position that intelligence was hereditary and some groups were inferior to others. Storfer (as cited in Adams, 1990) found the difference in IQ scores between Blacks and Whites to be more the result of inadequate prenatal and environmental factors that have the tendency to suppress scores rather than hereditary factors. Hilliard (as cited in Serwatka et.al., 1989) noted that the content of the tests used reflected the life experiences of White middle class society. He suggested that for the most part, students of different cultural backgrounds have not been exposed to those experiences and are operating from a different knowledge base. Swanson (as cited in Forsbach, 1999) proposed that economically disadvantaged families focus more on survival rather than providing educational experiences for their children. Taylor and Lee (as cited in Frasier, 1995) suggested that discrepancies may occur between the test taker and the tester when communicative styles and behaviors are not matched. Whatever the explanation, the absence of minority groups in gifted programs should cause educators to question their usefulness as one of the most common methods of identification.

Some quantitative instruments that are thought to be culturally sensitive include Coloured, Standard, and Advanced Progressive Matrices, the Kaufman Assessment Battery for Children, and the Torrance Tests for Creative Thinking (Patton as cited in Ford, 1995). Saccuzzo, Johnson, and Guertin (as cited in Ford, 2002) believe the Raven to be a far better measure of pure potential than tests such as the WISC-R.

Mills, Ablard, and Brody (1993) agree that the Standard and Advanced forms of Raven's Progressive Matrix is an appropriate instrument for screening gifted students but the Coloured form was not because it was designed for young children and mentally handicapped adults. Other assessment models cited by Patton (as cited in Ford, 1995) that result in more inclusive profiles of giftedness across racial/ethnic and cultural lines include the Baldwin Identification Matrix and the Frasier Talent Assessment Profile.

Ford (1995) cites the Scales for Rating the Behavioral Characteristics of Superior Students and the Multidimentional Screening Device as promising qualitative assessments. Subsequent studies by Ford (2002) found the Naglieri Non-Verbal Abilities Test to be one of the most promising instruments for assessing the strengths of minority populations. These instruments have been found to be more effective with minority populations because many of them are non-verbal and do not require students to have an extensive vocabulary to be successful. Also students do not have to rely heavily on past educational experiences. Table 2 provides more information about these assessment instruments. According to Hargett (interview, January 12, 2004), NC State AIG Coordinator, North Carolina does not have a recommended list of assessment instruments to identify the gifted potential of students.

Table 2

Quantitative and Qualitative Instruments for Identifying Gifted Students

Instrument		Measures
RPM	Raven Progressive Matrices	Abstract mental ability through the use of problems using figures and designs
K-ABC	Kaufman Assessment Battery for Children	Intelligence as a function of mental processing and achievement; suitable for early primary identification
TTCT	Torrance Tests for Creative Thinking	Fluency, flexibility, originality, and elaboration
	Baldwin Identification Matrix	Intellectual, academic, creativity, leadership, psychomotor
	Frasier Talent Assessment	Academic ability, motivation, leadership, the arts, creativity
	Scales for Rating the Behavioral Characteristics of Superior Students	Learning, motivation, creativity, leadership, artistic, musical, dramatics, communication, precision expressiveness, and planning
MDSD	Multidimentional Screening Device	Ten talent areas including visual arts, performing arts, creative thinking, specific academic ability, general intellectual leadership, psychomotor, and abstract and spatial thinking
NNAT	Naglieri Non-Verbal Abilities Test	Pattern completion, reasoning by analogy, serial reasoning, and spatial visualization

Ford (1998) reports that IQ and achievement test are used inconsistently to identify students. In some states, gifted students are considered to be those whose IQ is 130 or higher. Some states/school districts require an achievement test score at the 95th percentile while others require that students score above the 98th percentile. Additionally, after a student has been identified as gifted, he/she must maintain a high achievement score or risk being ousted from the program. Another way to view this dilemma is a student may be "gifted" one year and not the next without transferring to a different school if he/she drops below the designated percentile. Another practice of states is to identify the highest 3% or 5% or the student population. These and other arbitrary cutoffs on achievement and IQ scores can result in a student being gifted in one state but not in another.

Cohen (as cited in Frasier, 1991) argues that relying on test scores alone lowers the number of students who could potentially be served in gifted programs. Renzulli (1978) adds support to this argument by stating, "more (numbers and percentages) creative persons come from below the 95th percentile than above it, and if such cut-off scores are needed to determine entrance into special programs, we may be guilty of discriminating against persons who have the highest potential for high levels of accomplishment" (p.182).

Non–traditional Methods of Identification

A New Way of Thinking

Feldman (as cited in Maker, 1996) presented evidence that a major paradigm shift is occurring in the field of gifted education. He suggest that the new paradigm is one in which giftedness is perceived as having multiple forms, is developmental, and process-

oriented rather than stable and unchangeable and equal to a score on an intelligence test. Feldman further suggests that context is crucial to the development of giftedness and it may or may not be expressed or developed without special intervention or opportunities. Treffinger and Feldhusen (as cited in Baldwin & Vialle, 1999) cite the move toward a different paradigm is the result of a lack of defensible constructs for giftedness and a lack of recognition of populations that are culturally, socially, economically, and physically challenged.

Baldwin (2002) suggests that before proper identification methods can be addressed, some important assumptions must be embraced. They are:

1. Giftedness can be expressed through a variety of behaviors and the expression of giftedness in one dimension is just as important as giftedness expressed in another.
2. Intelligence is a broad concept that goes beyond language and logic to encompass a wide range of human abilities.
3. Carefully planned subjective assessment techniques can be used effectively along with objective measures.
4. Giftedness in any area can be a clue to the presence of potential giftedness in another area, or a catalyst for the development of giftedness in another area.
5. All cultures have individuals who exhibit behaviors that are indicative of giftedness. (p. 142)

Instruments

All instruments used to screen and identify gifted students must be valid, reliable, and culturally sensitive (Ford et.al, 1997). Sullivan (as cited in Masten, 1985) proposes that the study and use of cultural strengths of minority children should be used in the assessment process.

Bernal (as cited in Yancey, 1983) maintains, " to be culturally different means to be behaviorally different in group identifiable ways" (p. 4). If we are to accept this

premise then it becomes essentially important that a wide variety of alternative identification instruments are needed (Yancey, 1983).

Many school districts use a combination of test scores, teacher observations, behavioral checklists, past school performance, portfolio assessment, writing samples, parent observations, and input from the cultural group with which the student identifies in the local community in the identification process (Castellano, 1998; Richert, 2003; Coleman, 1992). While the use of multiple assessments is desirable, Richert (2003) and Maker (1996) voiced concern about giving test scores more weight in the decision making process. Howley and his colleagues (as cited in McFarland, 1998) found that where multiple criteria exist, they are used as cumulative hurdles rather than alternatives.

The portfolio is one alternative method for assessing student potential. Portfolios are purposeful collections of student work and records, gathered over time, that reflect the student's ability to produce, perceive and reflect (Simmons as cited in Ford, 2002). Wright and Borland (1993) point out that the National Association for the Education of Young Children and the National Association of School Psychologists advocate the use of portfolios is desirable for young children and economically disadvantaged students because they are ongoing, ecological, and curriculum-focused.

Case histories or biographical inventories have also been found to be useful in identifying minority populations (Bernal, 1980; Gay as cited in Masten, 1985). They use multiple sources to establish behavioral characteristics in different circumstances. Students' products and performances are also included in these types of identification methods.

Checklists and behavioral inventories rate a student according to general descriptions or more specific examples of behavior that are typical characteristics of gifted persons (Bernal, 1980). According to Martinson (as cited in Bernal, 1980), these instruments improve the nomination-identification process.

Bernal (1980) cites the use of language proficiency test in the identification of students who are limited English proficient. The tests establishes functional levels of syntactic mastery in English and another language.

Alternative Assessment Models

Researchers, writers and practioners have called attention to the need for changes in identification procedures (Maker, 1996) that are more inclusive. By passing the Jacob K. Javits Gifted and Talented Education Act of 1988 (P.L.100-97), Congress supported the belief that talent potential can be found in all cultural and economic groups (Maker, 1996). Funds were allocated to state and local educational agencies to initiate a program of research (Ford et.al., 1997). The Javits Act gave high priority to economically disadvantaged students, limited English proficient students, and students having disabilities or handicapping conditions (Section. 3063 (a)(1) as cited in Ford et. al., 1997). In addition to the Javits Act, the Department of Education's 1993 report, National *Excellence: A Case for Developing America's Talent* (as cited in Passow & Frasier), urged schools to eliminate barriers to participation and develop strategies for economically disadvantaged and minority students with outstanding talents. Two assessment models that show promise in identifying diverse populations are DISCOVER and APOGEE. These models reflect the new paradigm that views giftedness as having multiple forms.

DISCOVER (Discovering Intellectual Skills and Capabilities while Providing Opportunities for Varied Ethnic Reponses) was developed by June Maker (Maker, 1996). It is a performance based-assessment that is grounded in Gardner's theory of multiple intelligences and Maker's definition of giftedness that states "giftedness can be defined as the ability to solve complex problems in effective, efficient, elegant, and economical ways" (p. 44). The assessments are designed specifically for the identification of minority populations. It was developed for grades kindergarten through twelve. The identification method consists of five activities. The tasks range from structured to unstructured within the three intelligences most often addressed in school—linguistic, logical-mathematical, and spatial (Maker, 1996; Kornhaber, 1999). The classroom teacher administers two of the five tasks. One of these tasks is a mathematics worksheet with 17 problems that is given to the students for completion. The problems differ according to the grade level with the last five problems being open-ended in nature. Observers check for the number of correct answers, strategies used to solve the problems, and evidence of flexible or original thinking. The other task is to write a story on a subject of the student's choosing. The stories are evaluated and placed in one of four categories—Unknown, Maybe, Probably, and Definitely. Evaluators look for originality, complexity, and cause-effect relationships. Students are not penalized for spelling or grammar (Sarouphim, 1999).

The remaining tasks are administered on a separate day. Assessment usually takes place in the classroom with trained observers. There is usually one observer to five students. Observers rotate after each activity to avoid observer bias. Observers take notes on the processes used by students to solve problems, student products, and student

interactions with others. Pictures and videotapes are often taken of students with their constructions (Sarouphim, 1999; Kornhaber, 1999).

The first activity measures spatial intelligence using a construction tasks. In the second activity, the students are given 21 tangram pieces. After some modeling by the observer, they are asked to use the tangrams to make different geometric shapes using as many tangram pieces as possible. Also, they are asked to look at pictures of shapes and use the tangrams to make them. This activity is intended to measure logical-mathematical/spatial intelligence. In the third activity, students sort objects based on similarities or list descriptors of a single item. They use the items to verbally generate a story. Again, the students are evaluated in one of the four categories mentioned above for each task (Sarouphim, 1999). Students who receive a "definitely" in two or more of the five tasks are identified as gifted.

One of the distinctive features of DISCOVER is that all instructions are given in the dominant language of the child (Sarouphim, 1999). This feature makes it an attractive assessment for identifying Hispanic students as well as limited English proficient populations.

Sarouphim (2002) conducted a study involving 303 ninth graders to examine the validity of the DISCOVER assessment with an older population. The study was conducted over a four-year period in four different schools located in northern and southern Arizona. The participants were Hispanic (50%), Navajo Indian (29%), and White (21%). The socioeconomic status of the participants ranged from low income to lower middle class. A total of 89 (29.3%) students were identified. The percentages of students identified by ethnicity were Hispanic (33.5%), Navajo (28.4), and White

(20.6%). Based on the significant number of White students identified using this instrument, Sarouphim suggested that DISCOVER might also be used to identify the majority populations.

The second promising assessment for identifying diverse populations is Project APOGEE. Project APOGEE (Academic Programs for the Gifted with Excellence and Equity) was implemented in over thirty schools in eight New Jersey districts (Richert, 2003). Schools were located in rural, urban, and suburban districts.

Project APOGEE was developed with six key principles in mind (Richert, 2003). They were defensibility, advocacy, equity, pluralism, comprehensiveness, and pragmatism.

1. Defensibility: Procedures should be based on the best available research and procedures.

2. Advocacy: Identification should be designed in the best interests of all students. Students should not be harmed by the procedures.

3. Equity:
    - Procedures should guarantee that no one should is overlooked. Students from all groups should be considered for representation according to their demographic representation in the district.
    - The civil rights of students to equal access to programs should be protected. Strategies should be specified for identifying disadvantaged gifted.
    - Cutoff scores should be avoided because they are the most common way that disadvantaged students are discriminated against. (High scores should be used to include students, but if students meet other criteria—through self or parent nominations, for example—then a lower test score should not be used to exclude them.)

4. Pluralism: The broadest defensible definition of giftedness should be used.

5. Comprehensiveness: As many learners with gifted potential as possible should be identified and served.

6. Pragmatism: Procedures should allow for cost-effective modification of available instruments and personnel. (p.149-150)

What is unique about Project APOGEE is the literal interpretation that was applied to the 1993 federal definition of giftedness. The first line of the definition states: "Children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment" (as cited in Renzulli, 2002, p. 26). APOGEE used the definition to separate groups according to demographics and then select students from the upper 25% of each group based on a special norming system. Instruments used in the norming process were standardized achievement tests, teacher recommendations (K-11), parent recommendations (K-3), and self- nominations (6-11). The self, teacher and parent nomination instruments were all research based and thought to be easily implemented.

Demographic groups were defined as economic class, cultural groups, and gender. Economic class groups were based on whether the student received free or reduced lunch. Cultural groups included African American, Hispanic, Indian (from Asia), Asian, Native American, White, and Limited English Proficient. Students within a culture group or economic class were assumed to have similar experiences and environments.

Selected students were placed in a program that required schools to regroup students across classes at each grade level for instruction in reading, math, or science for at least one hour a day. Some schools regrouped for more than one subject. At the middle and high school level additional advanced or honors sections were added to school programs doubling the number of students enrolled in these sections. All teachers in the school received intensive training using Richert's Maximizing Cognitive, Affective and Ethical Potential Professional Development and Instructional Model (Richert, 2003). The idea here was to use the strategies with heterogeneously grouped classes as well as

classes of identified students to overcome Oakes' (as cited in Richert, 2003) argument that the highest achieving students get the most effective instruction or the best trained teachers.

The last stage of identification for Project APOGEE is ongoing evaluation and assessment of student's performance and interest. Students are assessed annually to determine if they should remain in a particular program option or would be better served in another program option. Students are not terminated from the program or placed on probation based on the annual assessment (Richert, 2003).

By renorming the data gathered for student selection, Project APOGEE increased the representation of culturally diverse students by 500%, economically disadvantaged by 600%, and an increase of 800% for poor, culturally diverse males. Proportionate representation was achieved for all demographic groups in each of the districts (Richert, 2003). Also worth mentioning, overall student achievement rose in schools where this project was implemented (Richert, 2003).

The Impact of Culture on Identification

Traditional instruments used to identify giftedness in students measure intelligence in relationship to a student's cognitive development. Banks (2003) sees culture as a major influence in cognitive development. He states that culture influences how a child processes and organizes information, communicates verbally, and perceives the world around him/her. Hilliard (1987) noted the differences in learning styles between African Americans and White American students. When these differences are misunderstood, they have the potential of failing to recognize strengths of African American students and decreasing opportunities to be identified as gifted.

Allen and Boykin (1992) suggest that cultural discontinuity may play a role in the academic achievement of African Americans thereby hindering their access to gifted programs. They believe that " cultural experiences provide people with a foundation for the development of intellectual skills…and cognitive performance will be either facilitated or hindered depending upon the contextual match between the conditions of learning and the learner's socio-cultural experiences" (p. 587). For example, Black students are assumed to be relational or predisposed to learning that is characterized by freedom of movement, variation, creativity, divergent thinking approaches, inductive reasoning, and a focus on people (Hilliard as cited in Bonner, 2000). Schools stress analytic thinking, restriction of movement, standardization, conformity, convergent thinking, deductive reasoning, and a focus on things. The contrast between preferred learning styles and traditional styles of teaching and testing pose problems in identifying African American students.

What is valued as gifted in one culture may not be valued as gifted in another culture (Sternberg as cited in Ford, 1998). Tonemah (as cited in Herring, 1996) states that Native American people have always found those among them that were considered visionary and exemplary. These individuals were not labeled as "gifted" by the tribes but thought to have been given special abilities by the Creator, which they humbly accepted responsibility for. Many of them were spiritual persons, orators, healers, singers, dancers, and artisans. This view of "giftedness" is not consistent with the mainstream view. Herring (1996) points out that cultural differences also exist among tribes so one should be careful in making generalizations about all Native Americans.

Morris (2002) offers yet another explanation for underrepresentation that is related to culture. Some Black students refuse to participate in school programs for the gifted. When programs are almost completely filled with White students, students perceive that they will have to sacrifice their Black experience in order to participate in what appears to be a "White" experience. In short, they do not want to be perceived by their friends as acting "White". Morris contends that the desire to remain culturally faithful is greater than the desire to achieve academically.

Serwatka, Deering, and Stoddard (1989) conducted a study to examine the relationship between the underrepresentation of Black students in classes for gifted students and particular school-related and socioeconomic-status-related variables. One school related variable was the presence of Black teachers on the staff. Representation in gifted classes and the presence of Black teachers on the staff revealed a positive correlation. One possible explanation for greater participation was Black teachers share similar cultural experiences that enable them to better identify giftedness in Black students.

Banks (as cited in Ford et. al., 2003) suggest that few teachers are exposed to multicultural educational experiences, multicultural curriculum and instruction, and practicum in urban settings. This lack of exposure leaves them ill prepared to work with culturally diverse, ethnically, and linguistically diverse students. Ford and Grantham (2003) suggest that multicultural education preparation among all school personnel may increase the recruitment and retention of minority students in gifted education.

Retention Issues

Educators must address issues related to keeping minority populations in gifted programs once they have been identified. According to Maker (1996) promising practices and identification procedures have often been dropped because those identified through their use were not successful in existing gifted programs. This is partly due to the fact that curriculum is usually designed for high academic achievers in the traditional curriculum. Many minority students, regardless of potential, have not been exposed to quality educational experiences. Many of these students come from less academically rigorous schools and classrooms (Ford et. al., 1997). Poor educational experiences coupled with teachers' beliefs about gifted children present challenges for gifted minority students (Ford, 1998). Maker (1996) contends that the fact that these children are not successful is not proof that they are not gifted or in need of a special program; rather it is an indication that programs are in need of change.

A few schools in North Carolina have begun to address the concern of poor educational experiences by adopting academic nurturing programs in grades K-2. Project Bright IDEA (Interest Development Early Abilities) is a collaborative initiative between the North Carolina Department of Public Instruction and The American Association for Gifted Children at Duke University. The project's mission is (a) to increase intellectual diversity into higher level courses and gifted programs from under-served populations and (b) to meet the state and federal mandates for closing the achievement gap (Project Bright IDEA Implementation Guide, 2000; Closing the Achievement Gap State Initiatives www.ncpublicschools.org/closingthegap). The project is designed to improve students' thinking skills beginning in kindergarten and prepare them to take more

rigorous classes as they progress through the grades. Project Bright IDEAS is a research-based model that incorporates Marazano's new taxonomy, Parks, Black and DeArmas's *Beginning Building Thinking Skills*, Costa's *Intelligent Behaviors*, Gardner's *Multiple Intelligences*, and Frasier's *Ten Core Attributes*. The curriculum design is concept-based multicultural units that reflect the research. One school in six school districts (Henderson County, Stanley County, Gaston County, New Hanover County, Thomasville City Schools, Wake County) participated in the project model. The schools chosen in each district were Title I schools. Program delivery occurred in "regular" classrooms. Project Bright IDEA is in its third year of implementation. While the results of this project have not yet been complied, annual preliminary results presented at the Project Bright IDEAS Fair on May 27, 2004 look promising.

Ford (1995) suggests support in the way of counseling strategies to address peer pressure and feelings of isolation. Tutoring and/or enrichment programs are suggested to close gaps in educational experiences. Ford (1997) further suggests that family involvement is essential. Family involvement would include participation in screening, identification, placement, and programming. Tharp (as cited in Maker, 1996) proposes the use of culturally compatible curricular and instructional strategies to reverse underachievement. This would require educators to become more culturally competent. Ford (2002) states that educators must take four steps to achieve this objective. They must: (a) engage in critical self-examination of their attitudes and perceptions about cultural diversity, and the influence of attitudes and perceptions on minority students' achievement and educational opportunities; (b) acquire accurate information about various cultural groups to include histories, historical contributions, and preferred

learning styles; (c) learn how to infuse multicultural perspectives and materials into curriculum and instruction to maximize students' academic, cognitive, social-emotional, and cultural development; (d) build partnerships with diverse families, communities, and organizations.

Summary of Literature

Over the years, scholars in the field of gifted education have offered many definitions of giftedness. Today, the United States has an official definition that recognizes several areas of giftedness. North Carolina has adopted a similar definition that recognizes two areas of giftedness- academic and intellectual abilities.

The literature revealed factors that may be contributing to the underrepresentation of minority students in gifted programs. One factor is the selection process, which includes defining giftedness and its indicators, nomination, screening, and assessment. Teacher training in gifted education and training in cultural differences that impact learning styles and lead to miscues of giftedness were also cited as a concern. The literature suggested that steps should be taken to ensure the retention of identified minority students in gifted education through affective and cognitive support systems as well as programs that nurture the academic potential of underserved populations.

Several traditional and nontraditional methods for student selection in gifted programs are included. Two assessment programs that show promise toward greater inclusion of minority populations and an academic nurturing program that is currently being implemented in North Carolina were also discussed in the literature.

RESEARCH METHODOLOGY

This chapter explains the data collection and analysis procedures for the study. It describes the objectives of the research, operational definitions for terms used in the research, sampling procedures, and the collection and analysis of data used in the research.

The terms "minority" and "underrepresented populations" are used throughout the research to identify groups of students. For purposes of this research these terms refer to African Americans, American Indians, and Hispanic Americans.

The research was conducted to address the issue of disproportionate representation of minority populations in gifted education programs. The research design is a comparative study of the features of the gifted program in six school systems. The schools systems compared in this study are Halifax County Schools, Weldon City Schools, Bertie County Schools, Wilson County Schools, Washington County Schools, and Anson County Schools.

This thesis rests on the assumption that some school systems in North Carolina are doing a better job of identifying gifted minority students than others. The current literature suggest that underrepresentation may be the result of several factors- defining giftedness and its indicators, nomination, screening and assessment, inadequate teacher training, procedures for retaining minority students in gifted programs once they are identified, and equitable access to programs. So what are the selection processes (defining who is gifted, indicators, nomination sources, screening practices, assessment) for school systems that identify more minority students? How do they differ from systems that identify fewer minority students? What factors beyond the screening process

support greater identification? Are there factors that encourage more or less of a gap in minority representation?

To answer these questions, six school systems were asked to respond to a questionnaire. The questions were focused on five areas related to the current literature- the definition of giftedness, screening and selection procedures, teacher training, retention practices, and equitable access via Article 9B.

Selection of School Systems

To identify the school systems, the researcher used statistical information from the North Carolina Department of Public Instruction. Datas from The Pupils in Membership 2002-2003 www.ncpublicschools.org/fbs/stats (see Appendix A) and April 2003 AIG Child Count www.ncpublcschools.org/ec/specialprograms/data/childcount/april1/agethnicity.shtml (see Appendix B) were examined. The information was combined and placed in a database. Using database tools, the researcher calculated the percentage of minority students enrolled in gifted programs for each LEA (See Appendix C). This data was compared to the percentage of their presence in the school population. The comparison revealed that none of the gifted programs in North Carolina were proportionally represented according to ethnic population. To increase the chances that larger numbers of minority students would be identified as gifted, North Carolina school systems with 50% or more minority populations were chosen. Twenty-nine school systems were identified. Of that number, six school systems were chosen to participate in the research. Three of the six (A, B, and C) represented the smallest gaps in representation and the

remaining three (D, E, and F) represented the largest gaps in representation. Statistical information for each system is shown in the Table 3.

Data Collection

A questionnaire (see Appendix D) was used to gather information about the six school systems. The AIG coordinator was contacted by phone and a copy of the questionnaire was sent via email or fax to be completed by him/her. Upon completion the questionnaire was returned to the researcher using the same methods. The AIG coordinator was asked to respond to eighteen questions that were divided into five areas – the definition of giftedness, screening and selection procedures, teacher training, equity, and retention practices.

One questionnaire was personally returned to the researcher by the AIG coordinator for that system. One school system did not return the questionnaire. Responses to the questionnaire for that system were gathered from the school system's current gifted education plan submitted to the North Carolina Department of Public Instruction, Exceptional Children's Division. It is noted with an (*) in the data collection.

The questions for describing the definition of giftedness area was designed to determine which areas of giftedness are identified, the indicators of giftedness, if the potential for giftedness is mentioned, and if underserved populations are mentioned.

The questions under screening and selection procedure addressed the development of talent pools, sources of nominations, commonly used intelligence/aptitude instruments, use of alternative instruments, criteria for selection, and the weight distribution for the indicators of giftedness, if any.

Table 3

Minority Populations and Their Presence in Gifted Programs

School System	Minority Population	Gifted Minority	Gap in Representation
A	94.3	88.9	5.4
B	97.2	81.8	15.4
C	85.6	68.1	17.5
D	75.0	33.8	41.2
E	59.4	15.7	43.7
F	64.4	17.0	47.4

Numbers indicate percentages.

Questions related to teacher training focused on certification, hours of training, training to recognize characteristics of gifted behavior, and training that addressed culturally different populations.

Two questions addressed retention. The questions inquire about collecting and analyzing retention data and practices and procedures employed to retain minority students once identified.

Two questions are used to address the issue of equity. They focused on factors contributing to gaps in minority representation since the implementation of Article 9B.

A second questionnaire was designed to interview North Carolina's State Coordinator for Gifted Education (see Appendix E). The questionnaire was designed to obtain information about state policies related to gifted education.

Limitations of the Study

One limitation of the study is that the survey instrument was not field tested for reliability or validity. However the instrument was reviewed for content and clarity by my advisor and a colleague. Some participants did not respond to all the questions on the questionnaire.

Another limitation is the size of the sample. There are 117 school systems in North Carolina making the sample less than a tenth of all school systems. Also, some systems did not respond to all the questions.

A third limitation is a regional concern. Due to the process chosen to identify the school systems, all of the school systems selected were coincidentally located in rural communities. This suggests that the findings of this research may or may not apply to

urban communities. Further research would be needed to determine if the findings hold true for urban communities.

Analysis Procedure

The results of the questionnaire were analyzed by comparing the responses in five categories. The categories were defining giftedness, screening/selection, teacher training, equity, and retention practices. Responses were analyzed for patterns that may attribute to larger or smaller numbers of students enrolled in gifted education. The responses were grouped in two categories –the selection process and related factors to better assist with the analysis of the results. The process occurred in a series of steps. The first step was to develop tables to report the responses to each of the questions by school system. Systems A, B, and C were grouped together to represent systems demonstrating smaller gaps in representation while systems D, E, and F were grouped to represent systems demonstrating larger gaps in representation. The next step was to compare of the responses within each grouping. Comparisons were made to look for patterns of response. The same response from at least two of the three systems was considered a pattern. A table was developed to compare the differences between the two groups.

As a result of the comparative analysis, educators will become aware of the variables that tend to influence the inclusion or exclusion of minority students in gifted programs.

FINDINGS AND ANALYSIS

The focus of this study was to identify factors that may influence the inclusion/exclusion of minority students in gifted programs in North Carolina. The study asked the following questions:

1. What are the selection processes for systems that identify more minority students?
2. How do they differ from systems that identify fewer minority students?
3. What factors beyond the screening process support the identification of minority students?
4. Are there characteristics that encourage more/less of a gap in representation for minority populations?

A questionnaire was developed to collect information about the gifted programs in six school systems. The school systems chosen were Halifax County Schools, Weldon City Schools, Bertie County Schools, Wilson County Schools, Washington County Schools, and Anson County Schools. Data were gathered in five areas related to representation of minority populations in gifted programs. Those areas were the definition of giftedness, screening and selection processes, teacher training, retention of minority students once identified, and equity through access. The results of the data are reported in this chapter. The responses are grouped in two categories – the selection process and factors related to the efficacy of the program to better assist with the analysis of the results.

The data was organized in table form to compare responses in three ways: among systems with smaller gaps in minority representation; and among systems with larger gaps in representation; and between systems representing smaller and larger gaps in

representation. The findings are followed by an analysis for each of the comparisons. A discussion that is tied to the literature, of factors that encourage more or less of a gap in representation follows the analysis for each category. The chapter concludes with a summary of the key findings of the study.

The Selection Process

The literature suggests that the selection process that identifies students for participation in gifted programs may contribute to the disproportionate numbers of students enrolled in these programs. Questions to be answered are:

1. What are the selection processes for systems that identify more minority students?
2. How do they differ from systems that identify fewer minority students?
3. Are there characteristics that encourage more/less of a gap in representation for minority populations?

For the purpose of the study, the selection process includes (a) a definition that identifies the areas of giftedness and their indicators as well as language that recognizes the potential for giftedness and special mention of underserved populations, (b) nomination and screening procedures, (c) and criteria for placement. Table 4 shows the comparison of the selection process for systems with smaller gaps in minority representation. Table 5 shows the comparison of the selection process for systems with wider gaps in minority representation. A comparison of response patterns for systems with smaller and wider gaps is shown in Table 6. Patterns were noted when two of the three systems had similar responses. Each comparison is followed by an analysis of the results based on patterns in response to the questions.

Table 4

Comparison of the Selection Process for Systems With Smaller Gaps

1. What areas of giftedness are recognized using your system's definition?	
System A	Academic, intellectual, critical thinking, creativity, independence
System B	Reading and Mathematics
System C	Academically and/or intellectually gifted

2. Is the potential of giftedness mentioned in the definition? How?	
System A	Yes; The wording is the same as the NC wording for potential
System B	Yes; The wording is the same as the NC wording for potential
System C	Yes; The wording is the same as the NC wording for potential

3. Are underserved populations mentioned in the definition?	
System A	No
System B	Yes
System C	Yes

4. What are the indicators of giftedness?	
System A	Performance, achievement, aptitude, interest, motivation
System B	70% or above on EOG 70% or above on SAGES 2 teacher/parent/recommendation student nomination
System C	Achievement, aptitude, observation, performance, interests, motivation

Table 4 cont.

5. What are the sources of nomination?	
System A	Teacher/parent/self referrals test results (EOG, ITBS)
System B	Teacher/parent/student referrals EOG results
System C	Teachers/staff/parent/community members/student referrals

6. Does the county conduct broad based searches?	
System A	Yes; 3rd grade ITBS and NNAT
System B	No
System C	Yes

7. What are the top two instruments used to assess intelligence? Aptitude?	
System A	Cognitive Abilities Test (CogAT) Woodcock Johnson
System B	Screening Assessment for Gifted Elementary Students (SAGE) EOG results
System C	Test of Cognitive Skills (TCS) 2nd Edition Naglieri Nonverbal Ability Test (NNAT)

8. Are alternative assessments used to assess students from culturally different populations? Which ones?	
System A	Naglieri Nonverbal Ability Test (NNAT)
System B	No
System C	Naglieri Nonverbal Ability Test (NNAT)

Table 4 cont.

9. What are the criteria for selection?	
System A	85% on two of three test administered daily academic performance teacher observation parent/teacher/administrators referrals
System B	Percentile on EOG Teacher recommendation Percentile on SAGES 2 Student grades
System C	Meeting 5 of the 6 indicators of giftedness (achievement, aptitude, observation, performance, interests, motivation)

10. Are some indicators given more weight than others? If so, which ones?	
System A	Yes; The process is individualized to address the needs of individual students.
System B	Yes; Percentile on the EOG and SAGES 2
System C	The plan does not indicate that one indicator is of more value than the others.

The results reveal four common characteristics in the selection process. Two of the characteristics refer to the definition. Academic ability and the potential for giftedness are recognized by all three systems. Teacher/ parent/ student referrals are used to nominate students for screening. Performance is used as criteria for selection in the three systems. System A was the only system that recognized creativity in its definition. Torrance (as cited in Adams, 1990) cites creative and productive thinking as one of the main strengths of minority children.

Systems A and C share three common characteristics in addition to the ones mentioned above. The indicators for giftedness are the same in both school systems. They also conduct broad based searches and use the same alternative assessments (NNAT) to assess students from culturally different populations.

Systems A and B and systems B and C share an additional characteristic in the selection process. Systems A and B give more weight to some indicators than others. Systems B and C consider underserved populations in their definitions.

The selection process differs among the systems in two ways. Instruments used to assess intelligence/aptitude are different. While performance is included as criteria in all three systems, the remaining criteria are quite different. System C focuses on the indicators of giftedness to determine criteria. The other systems, A and B, cite the result of tests, grades, teacher recommendations and observations, referrals and daily academic performance.

Table 5 shows the comparison of the selection process for systems with wider gaps in minority representation. Responses for System E were obtained from the system's

gifted education plan that is housed in the Exceptional Children's Division of the Department of Public Instruction. It is noted here with an (*) beside the letter E.

The responses for Systems D, E, and F reveal common characteristics for four of the responses. Academic ability is recognized as area of giftedness for these systems. Students are nominated for screening through teacher/parent/student/ other staff referrals. All three counties conduct broad based searches. Grades and the results of aptitude and achievement tests are used as the criteria for selection.

Systems E and F share two other common characteristics in the selection process. Both characteristics apply to the definition used by the systems. The potential of giftedness and underserved populations are mentioned in the definition.

Systems D and F have one additional characteristic in common. The indicators of giftedness are the same for both systems.

The selection process differs in three ways for Systems D, E, and F. There is no clear pattern of response for the instruments used to assess intelligence and aptitude. Alternative assessment instruments for culturally different populations vary. One system did not indicate the use of any alternative assessment. System F gives more weight to teacher input or an AIG identification team in borderline cases. System D does not assign greater weight to any of the indictors while the plan for System E does not indicate if some indicators are given more weight than others.

Table 6 shows how systems with smaller and wider gaps compare in the selection process.

Table 5

Comparison of the Selection Process for Systems with Wider Gaps

1. What areas of giftedness are recognized using your system's definition?	
System D	Academics
System E*	Academics, intellectual
System F	Mathematics, reading and language arts honors, AP classes

2. Is the potential of giftedness mentioned in the definition? How?	
System D	There is no written definition
System E*	Yes
System F	Yes; The wording is the same as the NC wording for potential

3. Are underserved populations mentioned in the definition?	
System D	No definition
System E*	Yes
System F	Yes

4. What are the indicators of giftedness?	
System D	Performance, achievement, aptitude, interest, motivation, observation
System E*	Aptitude, achievement, creativity, motivation
System F	Observation, performance, achievement, aptitude, interest, motivation

Table 5 cont.

5. What are the sources of nomination?	
System D	Administrators, teachers, parents, other professionals, students
System E*	Staff members, parents, students
System F	Teachers, parents, students, guidance

6. Does the county conduct broad based searches?	
System D	Yes; 3rd and 6th grades TCS, InView (Group IQ test), EOG results
System E*	Yes; 3rd and 6th grades
System F	Yes

7. What are the top two instruments used to assess intelligence? Aptitude?	
System D	InView, EOG, Woodcock Johnson, WISC
System E*	Several test are listed
System F	Test of Cognitive Skills (TCS), WISC III

8. Are alternative assessments used to assess students from culturally different populations? Which ones?	
System D	planning to purchase Naglieri Nonverbal Ability Test (NNAT)
System E*	Several suggested instruments are listed; Kaufman and Cognitive Abilities are on the list.
System F	Kaufman, Cognitive Abilities In the process of looking at Naglieri and Raven

Table 5 cont.

9. What are the criteria for selection?	
System D	Grades, projects, 2 years of EOG results above 90% on EOG and aptitude A's and B's student interest, motivation
System E*	Students must meet three of four criteria: • aptitude 90%> • achievement in reading or math 90%> • yearly average in subject area under consideration 90> • evaluation of 3-4 on completed portfolio assessment
System F	Aptitude, achievement, teacher input, grades, motivation, interest

10. Are some indicators given more weight than others? If so, which ones?	
System D	No; must meet three of the indicators
System E*	Plan does not indicate.
System F	Yes; teachers input if other sources are borderline; additional weight given by AIG identification team based on teacher recommendation

Table 6

Selection Process: Comparison of Systems with Smaller and Wider Gaps

Questions	Systems A, B, C (Smaller gaps)	Systems D, E, F (Wider gaps)
Q 1	Academic ability	Academic ability
Q 2	Potential for giftedness	Potential for giftedness
Q 3	Underserved populations	Underserved populations
Q 4	Indicators of giftedness	Indicators of giftedness
Q 5	Teacher/student/parent referrals	Teacher/student/parent referrals
Q 6	Broad based searches	Broad based searches
Q 7	*No common characteristics*	*No common characteristics*
Q 8	Naglieri	Kaufman and Cognitive Abilities
Q 9	Performance criteria	Grades, results of achievement and aptitude tests are criteria
Q 10	Weighted indicators	*No common characteristics*

The results of the comparison of selection processes between systems with smaller and wider gaps revealed three differences. Systems with less of a gap weigh some indicators over others. System A, which has the smallest gap in representation, cites a process that is individualized to meet the needs of the students. System B, which represents the second smallest gap, gives more weight to EOG results and the SAGES 2 instrument. Another difference is the alternative instruments used to assess students from culturally different populations. Naglieri Nonverbal Abilities test is used in systems with smaller gaps while Kaufman and Cognitive Abilities tests are used in the systems with wider gaps. The third difference is the criteria used in selection. Performance is a criterion for systems with smaller gaps. Systems having larger gaps report using grades and the results of achievement and aptitude tests as criteria for placement.

The study suggest three characteristics that may encourage less of a gap in minority participation: (1) giving more weight to some indicators, (2) performance as a criteria for placement, and (3) the use of Naglieri as an alternative instrument for assessing culturally different populations.

Richert (2003) advocates assigning more weight to some indicators than others as a strategy for identifying more minority students. However, she warns against giving test scores the majority of the weight in the decision making process. Howley and his colleagues (as cited in MacFarland, 1998) while advocating the use of multiple indicators, cautions that multiple indicators/assessments not be used as cumulative hurdles for identification.

While performance is an important indicator of the potential for giftedness, it should not be viewed as grades and test scores alone. The Guidelines Governing Local

Plans for Gifted Education (2004) supports the use of a variety of performance indicators. Portfolios, student products, student accomplishments in the school and community are examples of indicators that are not reflected in grades and test scores.

Naglieri Nonverbal Ability Test (NNAT) is mentioned in the literature as one of the most promising instruments to assess the strengths of minority students (Ford 2002). NNAT is a nonverbal evaluation of general ability. The student must see the patterns formed by shapes organized into colorful designs and then choose an answer that completes the pattern. Questions can be solved using only the information presented in the diagram (Naglieri, n.d.). Ford (2002) cites the lack of reliance on verbal skills and past educational experiences as features that make Naglieri a fair evaluation of ability for children from different cultural and linguistic groups.

Findings from the study suggest two characteristics- using test scores/grades as the criteria for placement and the choice of instruments used to assess students from culturally different populations may encourage wider gaps in representation. The literature suggests that the use of test scores alone lowers the number of students who could potentially be served in gifted programs (Cohen as cited in Frasier, 1991). Renzulli (1978) noted that more persons possessing high levels of creativity score below the 95th percentile. The literature also cites Kaufman (Patton as cited in Ford, 1995) and Cognitive Abilities Test (Sameuda as cited in Ford, 1998; Riessman, 1962) as culturally insensitive instruments.

Program Efficacy

The current research suggests that factors related to the efficacy of programs may be influencing the smaller numbers of students enrolled in gifted programs for North Carolina. Questions to be answered are:

1. What factors beyond the screening process support the identification of minority students?
2. Are there characteristics that encourage more/less of a gap in representation for minority populations?

This study addresses four of the factors- teacher training, attention to cultural differences, and the retention of students in programs once they are identified, and equity through access via Article 9B. Table 7 shows the comparison of these four factors for systems with smaller gaps in minority presentation. Table 8 compares the four factors for systems with wider gaps. A comparison of response patterns for systems with smaller and wider gaps is shown in Table 9. An analysis follows each of the table comparisons.

The responses for Systems A, B, and C revealed no patterns for all of the systems. Systems A and C show response patterns for four out of the eight questions. Both systems indicate that one hundred eighty hours of training are required for certification. The training addresses culture differences in African American, Hispanic American, and American Indian populations, and characteristics of gifted behavior. The number of teachers holding certification differs in each system with Systems A and B having small numbers of AIG certified teachers. Systems A and C differ in their responses to the impact of Article 9B on minority representation and practices for retaining minority students in programs. System C indicates that the use of multiple criteria has resulted in

Table 7

Comparison of Program Efficacy Factors for Systems with Smaller Gaps

11. How many teachers are certified to teach gifted students?	
System A	1 AIG specialist; 2 classroom teachers 15 teachers are in the process of completing a 180 hour study
System B	2
System C	65 with 14 others having hours toward certification
12. How many hours are required for certification?	
System A	180 hours for certification 90 hours for local endorsement
System B	
System C	180 hours
13. Are teachers trained to identify gifted behavior?	
System A	Teachers involved in AIG certification
System B	No formal training is in place
System C	Yes, Staff development based on current research
14. Does the training specifically address culture differences in African American, Hispanic American, and American Indian populations?	
System A	Yes. The largest populations in our system are African American and Native American in that order.
System B	
System C	Yes

Table 7 cont.

15. Are there practices in place to address the retention of minority students who have been placed in gifted programs?	
System A	No experience with failure to the extent that retention is necessary. Students can be removed from the AIG roll if requested by parents.
System B	
System C	Yes. Students are placed on academic probation and given support.

16. Do you collect and analyze data on the retention of minority students?	
System A	No. Data is collected on the percent of students from all ethnic groups who are retained. Data is collected on six-week performance patterns.
System B	
System C	Yes. A file is kept on each student on academic probation.

17. Has the implementation of Article 9B had an impact on the number of minority students identified for gifted programs?	
System A	Not yet
System B	The system is currently in a reorganization of its AIG program.
System C	Yes. Through the use of multiple criteria, all ethnic groups are included.

Table 7 cont.

18. What factors have contributed to increases/decreases in minority representation since the implementation of Article 9B?	
System A	
System B	
System C	Multiple criteria have made staff members aware of the indicators of giftedness.

the inclusion of all ethnic groups. System A has not realized any change. System B did not respond to questions about the hours required for certification, training for populations that are culturally different, data collection and practices related to retention of students in programs, or the impact of Article 9B for minority students.

As stated earlier Table 8 compares the four factors for systems with wider gaps. System E did not return the questionnaire. Responses for that system were gathered from the current gifted education plan submitted to the North Carolina Department of Public Instruction, Exceptional Children's Division. The system is identified with an (*) in the data collection. Table 9 shows the comparison between the groups of systems.

The results revealed no common patterns for all of the systems. Much of the data needed to include School E in the comparison could not be obtained from the gifted education plan submitted to the North Carolina Department of Public Instruction.

Systems D and F showed patterns of response for five of the questions. Both systems indicated that teachers receive training to identify gifted behavior and the training addresses cultural differences in African American, Hispanic American, and Native American populations. Eighteen hours of training is required for certification in both of the systems. A small number of teachers are certified in each system. Since the implementation of Article 9B, System D has included a nurturing program at K-3 to its plan and is looking more carefully for strengths. System F indicates the implementation of Article 9B has resulted in broader searches. Cutoff numbers are no longer used as the sole criteria for services.

Systems E and F share one response. The systems have practices that address the retention of minority students once they have been placed in gifted programs.

Table 8

Comparison of Program Efficacy Factors for Systems With Wider Gaps

11. How many teachers are certified to teach gifted students?	
System D	4
System E*	
System F	5

12. How many hours are required for certification?	
System D	18 hours
System E*	180 hours
System F	18 hours

13. Are teachers trained to identify gifted behavior?	
System D	Yes
System E*	
System F	Yes. Those taking courses outlined by DPI have a course specifically designed.

14. Does the training specifically address culture differences in African American, Hispanic American, and American Indian populations?	
System D	Yes.
System E*	
System F	To some degree in terms of staff development workshops with cultural diversity and sensitivity training.

Table 8 cont.

15. Are there practices in place to address the retention of minority students who have been placed in gifted programs?	
System D	No
System E*	Yes; Intervention plan developed by AIG specialist, parents, and teachers
System F	Yes, no one is ever "ungifted". Placement options may change to benefit the students and their selected curriculum-especially at middle-high school levels.

16. Do you collect and analyze data on the retention of minority students?	
System D	
System E*	
System F	Yes. EOG testing disaggregation school improvement goals.

17. Has the implementation of Article 9B had an impact on the number of minority students identified for gifted programs?	
System D	Looking more carefully for any strength Nurturing program for K-3 by teacher nomination
System E*	
System F	No

Table 8 cont.

18. What factors have contributed to increases/decreases in minority representation since the implementation of Article 9B?	
System D	Nurturing program at K-3 Looking for strengths
System E	
System F	Increase- Broader search basis. Gifted Education teams at each school using discretion of impacting factors. Cutoff numbers are not used alone as the basis for services.

Table 9

Program Efficacy: Common Characteristics for Systems With Smaller and Wider Gaps

Questions	Systems A, B, C (Smaller gaps)	Systems D, E, F (Wider gaps)
Q 11	Small numbers	Small numbers
Q 12	180 hours	18 hours
Q 13	Teachers trained to identify gifted behavior	Teachers trained to identify gifted behavior
Q 14	Training addresses cultural differences	Training addresses cultural differences.
Q 15	*No common characteristics*	Practices to address retention
Q 16	*No common characteristics*	*No common characteristics*
Q 17	*No common characteristics*	*No common characteristics*
Q 18	*No common characteristics*	Broader searches; Cut-off scores eliminated

The comparison of factors related to program efficacy for systems with smaller and wider gaps in minority representation show three similarities. The systems have small numbers of teachers certified to teach gifted students. Those teachers, who are certified, receive training in gifted behaviors and culture differences in African American, Hispanic American and American Indian populations. The school systems with wider gaps in representation report the use of practices to retain students once they have been identified. The implementation of Article 9B has resulted in an increase of minority representation for the school systems with wider gaps. The increase has been a result of broader searches and the elimination of cutoff scores.

Only one characteristic may encourage a smaller gap in minority representation. Systems with more minority students identified require 180 hours of training for certification. Systems with fewer minority students identified require 18 hours of training. North Carolina does not require teachers to be certified in gifted education (Interview with Valorie Hargett, State AIG Coordinator, 2004). The research suggests that many teachers do not identify large numbers of gifted students (Pegnato & Birch as cited in Ford, 1995; Jacobs as cited in Ford, 1995; Cox & Daniels as cited in Ford, 1995). The misidentification is largely due to lack of training in gifted education, preparation in testing and assessment, and teacher expectations. For underserved populations, the problem may be compounded by the inability to recognize potential giftedness in culturally and economically disadvantaged children (Frasier, 1995).

Summary

The review of literature points to several factors that may be influencing the representation of underserved populations in gifted programs. Those factors include

defining giftedness and its indicators, nomination, screening and assessment, and criteria for placement, teacher training, cultural differences, retention practices, and equitable access.

The study was designed to compare responses addressing these factors between school systems having smaller and wider gaps in minority representation. Six school systems were chosen for the study. Systems A, B, and C represented school systems with smaller gaps in representation. Systems D, E and F represented school systems with wider gaps in representation.

The results of the study revealed differences between the two groups. The systems with smaller gaps share the common characteristics of recognizing performance as an indicator of giftedness, using Naglieri Nonverbal Abilities as an alternative assessment instrument, giving more weight to some of the indicators of giftedness, and requiring one hundred eighty hours of training for certification. The use of cutoff scores for aptitude and achievement test, culturally insensitive assessment instruments, and eighteen hours of training for certification are common characteristics for school systems with wider gaps.

The conclusion of the study points to rigid cutoff scores on achievement/aptitude tests, instruments that are not culturally sensitive, and a small number of hours of teacher training as characteristics that encourage wider gaps in representation.

DISCUSSION

The purpose of this research was to compare identification procedures for placement in six gifted programs in North Carolina, in hopes of making recommendations toward greater inclusion and retention of underserved populations. An examination of the North Carolina's 2003 AIG count and 2002-2003 Pupil in Membership showed that some school systems have smaller gaps in representation than others. The focus of the research was (1) to identify the selection processes for those systems identifying more minority students, (2) to compare the processes to those used by systems identifying fewer students, (3) to determine the impact of factors beyond the screening process on identification, and (4) to identify characteristics that may be encouraging more or less representation.

The steps followed in this study were (1) to review the literature on gifted education to identify the issues related to the underrepresentation of minority populations, (2) to identify six school systems, with fifty percent or greater minority students, three of which have small gaps in representation and three with wider gaps, (3) to use the literature to design a questionnaire to be completed by the gifted education coordinator of each system, and (4) use the data to compare selection processes and other factors that impact identification between the two groups in order to identify characteristics that encourage more or less of a gap in minority representation.

The literature revealed that the absence of minority students in gifted programs may be the result of several factors. Defining giftedness and its indicators, sources of nomination, screening and assessment practices, inadequate teacher training to identify giftedness in diverse cultures, and practices for retaining minority students once

identified may be factors that contribute to the small number of minority students in gifted education programs. Six school systems were selected to compare responses to questions that focused on the factors. Halifax County (System A), Weldon City (System B), and Bertie County (System C) were chosen to represent systems with smaller gaps. Washington, Wilson, and Anson Counties that were identified as Systems D, E, and F respectively in this study were chosen to represent systems with wider gaps.

The study revealed four characteristics that may encourage less of a gap in minority participation. One characteristic was assigning more weight to some indicators over others. On the surface this may seem to be a practice that would encourage wider gaps. A closer examination of this characteristic reveals that System A which has the smallest gap in representation, cites an individualized process based on student needs to weigh one criteria over another. According to the study, other characteristics that encourage less of a gap are using performance as a criterion for placement, using Naglieri Nonverbal Abilities test as an alternative instrument for assessing culturally different populations, and requiring one hundred eighty hours of teacher training for certification. In this case performance is more than a function of grades and achievement scores. Performance includes a variety of assessments including portfolio and student products (Guidelines Governing Local Plans for Gifted Education, 2004).

Findings from the study suggest the use of test scores/grades as the only criteria for placement may encourage wider gaps in representation. This finding may be driven by the fact that North Carolina only recognizes academic and intellectual ability (North Carolina General Statue, Chapter 115C-150.5, 1996). Academic and intellectual ability are traditionally measured by test scores and grades. Torrance (as cited in Adams, 1990),

cited creativity as one of the main strengths of minority children. This strength cannot be captured in test scores and grades.

The choice of instruments used to assess culturally different populations in Systems D, E, and F may also encourage wider gaps in representation. Fewer teacher training hours were required in the systems with fewer minority students identified. This finding may suggest an inability of teachers in these systems to recognize gifted behaviors among minority populations.

The study revealed two interesting findings related to the efficacy of these programs. The first finding addresses retention practices. Only one system with less of a gap has practices in place to retain minority students in programs once they have been identified. A possible explanation for this is systems with smaller gaps may not view retention as an issue because other program features such as the 180 hours of teacher training is meeting the need of retention. Data is kept on each student who is in danger of not meeting the requirements. The data is analyzed to develop intervention strategies. The systems with wider gaps report having practices in place but only one system is collecting and analyzing the data. It is important to note that in both cases, the systems are analyzing academic data. The literature suggests that there may be other reasons for failing to retain minority students in programs. Morris (2002) suggests the need of minority students to remain culturally faithful is far greater than the need to be academically successful. Ford (1995) suggests feelings of isolation may be a problem. These issues and others like them are not addressed in intervention strategies that are developed by analyzing academic data.

The second finding addresses changes in the identification process as a result of Article 9B which gave systems greater flexibility in identification. Results from this study reveal the change in the law has yielded more increases in minority representation for systems with wider gaps than systems with smaller gaps. Only one school system with smaller gaps reported the increase of minority representation as a result of the law. The factor influencing the increase is a heightened awareness of multiple indicators of giftedness. This finding is supported in the literature. Baldwin (2002) states that giftedness in any area can be a clue to the presence of potential giftedness in another area, or a catalyst for the development of giftedness in another area. By being aware of multiple indicators of giftedness, teachers are better equipped to identify giftedness or the potential for giftedness in areas that have not been traditionally recognized. The systems with wider gaps in representation attribute the increase to broader searches and eliminating the practice of using cutoff scores as the sole criteria for placement. Cohen (as cited in Frasier, 1991), found that cutoff scores reduced the number of minority students identified for gifted programs. His research supports the increase in representation for systems with wider gaps.

CONCLUSION

This study addresses the concern of the absence of minority populations in gifted programs. The concern is a genuine one because participation in gifted programs has been linked to student achievement. The absence of minority populations in these programs may unwittingly perpetuate gaps in achievement and create inequitable lifetime opportunities.

North Carolina reports performance data for its students each year in the form of a report card. Data obtained from the 2002-2003 report card www.ncreportcards.org for two of the school systems participating in this study are shown in Table 10. Specifically, Table 10 shows the percentage of minority students who performed at or above grade level in the system with the smallest (System A) and widest (System F) gaps in representation. The performance data favors systems with smaller gaps. Differences range from three to seventeen percentage points for Reading and five to fifteen percentage points for Mathematics. These numbers imply a relationship between participation in gifted programs and student achievement.

Several characteristics were found to encourage less of a gap in minority representation in gifted education programs. One characteristic was assigning more weight to some indicators over others. Other characteristics that encourage less of a gap are using performance as a criterion for placement, using Naglieri Nonverbal Abilities test as an alternative instrument for assessing culturally different populations, and requiring one hundred eighty hours of teacher training for certification.

The use of test scores/grades as the only criteria for placement and a lack of attention to the collection and analysis of academic and nonacademic data as a means of

Table 10

Percentage of Students at of Above Level III (2002-2003)

	System A (Reading)	System F (Reading)	System A (Math)	System F (Math)
African American	72.3	61.7	78.2	66
Hispanic	78.9	75	84.2	79.2
American Indian	79.1	61.5	85	69.2

retaining minority students in programs are characteristics found to encourage gaps wider gaps in representation.

Implications

The implications of this study are important for state policy makers, district level gifted coordinators, school leaders, and teachers.

The findings of this study are important for state policy makers. Policy makers are not only responsible for writing laws but they also bear the responsibility of monitoring to determine if the law is producing the intended result. The intended result of Article 9B was to create enough flexibility in identification procedures in an attempt to identify more underrepresented populations. School systems reported that the implementation of Article 9B has led to some positive changes. School systems are conducting broader searches for potentially gifted students using multiple indicators. School systems are moving away from the use of cutoff scores for identification. However the literature does not indicate that much change has occurred in respect to the number of students being identified. Policy makers can use this information to commission a study of the variables that may be holding the numbers constant.

The AIG coordinator is responsible for overseeing the implementation of the gifted education program and evaluating the program. Collecting and analyzing data would help with the evaluation process. Specifically, the results of this study will lead coordinators to review their plans for the characteristics that seem to favor fewer gaps in representation, gather data to support changes in programs, and take steps to eliminate any barriers. For example, the coordinator could purchase alternative instruments that have been proven to be successful in identifying culturally different populations.

School leaders are responsible for selecting professional development that addresses the needs of the teachers and the students. The results of this research indicate school systems that require more teacher training in gifted education that also addresses culturally different populations have less of a gap in minority representation. School leaders could design professional development opportunities that focus on identifying the potential for giftedness within all cultural groups that make up the demographics of a school.

The results of this study have strong implications related to curriculum and instruction for teachers. Performance was a common characteristic in systems with fewer gaps in representation. High performance is associated with quality learning experiences. Many minority populations have not been exposed to quality educational experiences (Maker, 1996). Redesigning curriculum to include study skills, strategies for learning new material, higher level thinking skills, problem solving and metacognitive skills can help with the identification and retention of minority students (Ford, Baytops, & Harmon, 1997). A change in curriculum would require a change in how teachers deliver the curriculum. Teacher directed learning environments will not support a curriculum that requires student to become independent thinkers. One of the major criticisms of alternative identification programs is that minority students are identified and selected on one set of criteria and then expected to perform in settings that are based on a different set of criteria (Baldwin, 2002).

Recommendations for Future Research

More research is needed to examine the issues surrounding inequities in representation in gifted education for North Carolina. If Article 9B gives systems the

flexibility to include areas of giftedness other than academic ability and intellectual ability, then why haven't school systems taken advantage of the law to increase not only minority counts but gifted student counts? What is the frequency of referrals for teachers, parents, and administrators? What is the statistical data for retaining minority students in programs in North Carolina? These are just a few of the questions that the researcher believes would add to a limited body of knowledge on under representation of minority students in gifted education.

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Appendix A. Pupils in membership by race and sex, 2002-03.

PUPILS IN MEMBERSHIP BY RACE AND SEX, 2002-03

	Indian		Asian		Hispanic		Black		White		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Alamance-Burlington	32	42	135	154	1,187	1,084	2,872	2,777	6,692	6,391	21,366
Alexander County	4	1	98	83	116	117	183	175	2,429	2,276	5,482
Alleghany County	1	1	0	0	58	43	14	10	643	682	1,452
Anson County	14	4	32	29	28	22	1,405	1,402	769	756	4,461
Ashe County	5	6	4	6	37	38	30	20	1,586	1,475	3,207
Avery County	3	3	4	4	25	22	11	15	1,205	1,081	2,373
Beaufort County	0	1	11	15	183	165	1,541	1,488	1,986	1,892	7,282
Bertie County	9	3	4	1	13	8	1,525	1,427	262	234	3,486
Bladen County	27	27	5	2	119	120	1,456	1,388	1,324	1,203	5,671
Brunswick County	39	40	10	13	180	151	1,279	1,277	3,898	3,726	10,613
Buncombe County	60	49	97	100	482	441	1,011	974	11,000	10,451	24,665
Asheville City	1	5	13	14	68	65	873	890	1,047	944	3,920
Burke County	9	7	684	652	310	271	633	619	5,848	5,625	14,658
Cabarrus County	39	33	123	125	701	643	1,670	1,649	8,143	7,770	20,896
Kannapolis City	5	6	31	35	303	241	719	679	1,246	1,131	4,396
Caldwell County	5	5	51	45	208	189	552	526	5,638	5,514	12,733
Camden County	0	1	6	8	4	3	138	97	573	566	1,396
Carteret County	7	15	26	31	78	63	508	435	3,619	3,369	8,151
Caswell County	3	4	3	6	49	37	797	750	958	899	3,506
Catawba County	12	20	629	579	467	446	662	684	6,743	6,338	16,580
Hickory City	0	4	204	173	239	228	615	635	1,128	1,169	4,395
Newton-Conover City	2	3	109	98	170	151	275	290	866	834	2,798
Chatham County	8	10	26	19	597	533	855	837	2,310	2,057	7,252
Cherokee County	33	31	12	7	31	18	65	42	1,754	1,619	3,612
Edenton/chowan	2	2	4	1	21	16	615	609	627	605	2,502
Clay County	0	2	5	2	8	6	6	8	615	594	1,246
Cleveland County	4	3	15	7	88	83	1,239	1,157	3,594	3,412	9,602
Kings Mountain	4	4	49	46	39	34	550	568	1,706	1,665	4,665
Shelby City	2	0	7	8	28	24	935	933	682	592	3,211
Columbus County	206	204	2	1	108	108	1,464	1,391	1,807	1,771	7,062
Whiteville City	13	10	4	4	36	33	622	608	685	688	2,703
Craven County	24	29	84	58	261	220	2,613	2,647	4,344	4,235	14,515
Cumberland County	476	426	448	414	1,492	1,483	13,027	12,776	10,998	10,503	52,043
Currituck County	7	3	8	7	31	25	165	182	1,502	1,497	3,427
Dare County	5	2	10	8	78	75	120	113	2,241	2,071	4,723
Davidson County	22	37	65	64	153	158	285	255	9,225	8,923	19,187
Lexington City	7	4	94	85	297	308	751	731	495	452	3,224
Thomasville City	2	1	10	7	181	194	634	600	456	395	2,480
Davie County	3	4	8	10	171	183	301	271	2,578	2,419	5,948
Duplin County	7	7	4	7	865	804	1,519	1,533	2,041	1,935	8,722

PUPILS IN MEMBERSHIP BY RACE AND SEX, 2002-03

	Indian		Asian		Hispanic		Black		White		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Durham County	47	37	383	337	1,419	1,286	9,167	8,946	4,696	4,266	30,584
Edgecombe County	0	2	9	10	179	159	2,186	2,185	1,516	1,397	7,643
Forsyth County	64	50	305	270	2,276	2,243	8,903	8,493	12,370	11,427	46,401
Franklin County	14	8	19	17	285	227	1,563	1,573	2,224	1,984	7,914
Gaston County	34	18	211	214	624	589	3,114	3,183	11,830	11,040	30,857
Gates County	1	1	3	7	8	10	428	411	594	518	1,981
Graham County	56	71	0	1	1	2	1	5	537	496	1,170
Granville County	11	3	23	16	191	188	1,756	1,664	2,363	2,333	8,548
Greene County	0	1	5	4	226	187	841	791	640	500	3,195
Guilford County	225	210	1,381	1,370	1,564	1,430	14,200	13,813	15,572	14,934	64,699
Halifax County	174	130	2	1	20	15	2,546	2,463	185	138	5,674
Roanoke Rapids City	5	7	23	22	20	17	360	337	1,156	1,118	3,065
Weldon City	2	0	2	0	2	1	542	495	16	12	1,072
Harnett County	69	66	29	39	700	598	2,754	2,743	4,964	4,741	16,703
Haywood County	23	33	9	16	84	82	89	78	3,783	3,639	7,836
Henderson County	21	18	59	50	584	554	427	392	5,154	4,728	11,987
Hertford County	22	21	12	10	2	16	1,510	1,548	340	308	3,789
Hoke County	481	437	29	26	223	190	1,498	1,521	970	920	6,295
Hyde County	0	0	0	0	18	21	150	163	166	163	681
Iredell-Statesville	7	19	244	241	524	496	1,703	1,672	6,956	6,602	18,464
Mooresville City	4	6	38	37	45	34	380	414	1,649	1,599	4,206
Jackson County	198	170	12	15	40	35	43	31	1,594	1,498	3,636
Johnston County	45	36	49	38	1,178	1,133	2,712	2,585	8,062	7,646	23,484
Jones County	2	2	0	2	22	25	403	375	313	286	1,430
Lee County	24	24	28	42	837	824	1,216	1,169	2,486	2,299	8,949
Lenoir County	5	9	28	17	239	192	2,698	2,542	2,261	2,175	10,166
Lincoln County	11	24	24	21	415	385	563	539	4,691	4,374	11,047
Macon County	7	7	15	13	60	54	32	41	2,011	1,877	4,117
Madison County	5	6	1	2	13	17	3	6	1,354	1,155	2,562
Martin County	1	4	2	7	51	43	1,311	1,227	961	932	4,539
McDowell County	6	10	66	50	144	145	169	154	2,949	2,824	6,517
Mecklenburg County	339	296	2,478	2,254	4,399	4,121	24,506	23,726	24,370	23,105	109,594
Mitchell County	1	3	1	2	52	49	6	7	1,183	1,052	2,356
Montgomery County	2	2	70	55	385	386	653	614	1,169	1,110	4,446
Moore County	55	49	37	34	334	328	1,415	1,414	3,959	3,779	11,404
Nash-Rocky Mount	35	30	115	86	437	403	4,977	4,898	3,635	3,494	18,110
New Hanover County	49	29	117	118	244	221	3,209	3,329	7,489	7,053	21,858
Northampton County	2	3	1	1	13	13	1,395	1,314	354	281	3,377
Onslow County	116	119	170	141	502	457	3,042	3,226	7,052	6,712	21,537
Orange County	11	10	18	28	134	123	775	746	2,335	2,180	6,360

PUPILS IN MEMBERSHIP BY RACE AND SEX, 2002-03

	Indian		Asian		Hispanic		Black		White		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
Chapel Hill-Carrboro	12	17	516	523	360	308	983	978	3,468	3,195	10,360
Pamlico County	6	6	3	3	6	7	316	278	576	545	1,746
Pasquotank County	3	5	25	13	30	30	1,561	1,461	1,416	1,407	5,951
Pender County	13	6	8	5	161	135	1,063	1,055	2,287	2,092	6,825
Perquimans County	4	1	1	1	8	7	330	325	533	505	1,715
Person County	12	15	6	7	85	78	1,138	1,103	1,706	1,646	5,796
Pitt County	15	13	122	136	407	348	5,376	5,311	4,624	4,339	20,691
Polk County	1	1	5	7	69	66	123	109	1,000	995	2,376
Randolph County	40	38	75	54	618	570	585	544	8,039	7,515	18,078
Asheboro City	3	7	43	73	525	489	358	383	1,303	1,204	4,388
Richmond County	90	79	39	31	151	126	1,765	1,667	2,245	2,156	8,349
Robeson County	5,231	5,013	47	35	503	516	3,837	3,708	2,659	2,411	23,960
Rockingham County	15	20	25	34	324	317	2,037	1,931	5,150	4,870	14,723
Rowan-Salisbury	33	25	143	130	552	529	2,432	2,394	7,443	7,074	20,755
Rutherford County	4	3	18	20	141	112	888	850	4,029	3,917	9,982
Sampson County	56	50	11	10	707	588	1,337	1,198	2,070	2,017	8,044
Clinton City	53	50	12	12	98	104	660	668	524	522	2,703
Scotland County	414	412	24	26	24	22	1,677	1,593	1,359	1,334	6,885
Stanly County	11	15	228	169	173	141	850	826	3,972	3,587	9,972
Stokes County	8	8	7	8	61	57	257	216	3,517	3,300	7,439
Surry County	6	7	25	43	486	443	179	189	3,659	3,399	8,436
Elkin City	0	1	4	2	62	66	32	38	460	465	1,130
Mount Airy City	2	1	41	46	58	57	133	138	722	705	1,903
Swain County	195	176	4	1	11	13	7	8	698	627	1,740
Transylvania County	4	2	12	11	24	24	140	152	1,780	1,644	3,793
Tyrrell County	0	0	2	0	15	23	168	144	174	158	684
Union County	37	38	118	91	945	898	2,214	2,190	9,735	9,129	25,395
Vance County	5	5	16	13	238	223	2,806	2,570	1,245	1,131	8,252
Wake County	126	149	2,276	2,108	3,429	3,301	15,268	15,115	32,191	30,515	104,478
Warren County	72	81	4	0	30	37	1,211	1,140	308	300	3,183
Washington County	0	0	1	3	16	13	819	817	297	255	2,221
Watauga County	2	3	22	17	24	32	52	56	2,388	2,137	4,733
Wayne County	12	11	97	92	568	580	4,337	4,110	4,746	4,477	19,030
Wilkes County	1	2	26	22	260	264	299	303	4,541	4,424	10,142
Wilson County	6	5	55	46	417	434	3,274	3,110	2,516	2,336	12,199
Yadkin County	5	8	10	10	362	323	128	121	2,503	2,425	5,895
Yancey County	1	4	4	3	50	50	16	13	1,208	1,160	2,509
State Total	9,774	9,307	13,227	12,347	40,002	37,483	206,437	201,113	398,263	376,372	1,304,325

Appendix B. April 2003 gifted child count.

APRIL 2003 Child Count Data

CAT	UNIT	UNIT NAME	ASIAN, FEMALE	ASIAN, MALE	BLACK, FEMALE	BLACK, MALE	HISP., FEMALE	HISP., MALE	NATIVE, AMER.,	NATIVE, AMER., MALE	MULTI, CULT., FEMALE	MULTI, CULT., MALE	WHITE, FEMALE	WHITE, MALE	TOTAL
AG	10	Alamance-Burlington	21	31	91	72	17	22	4	2	16	11	961	889	2137
AG	01B	River Mill Charter	0	0	0	0	0	0	0	0	2	2	10	12	26
AG	20	Alexander County	1	6	9	6	3	3	0	0	1	0	218	210	457
AG	30	Alleghany County	0	0	0	0	2	1	0	0	0	0	119	67	189
AG	40	Anson County	0	1	18	13	0	0	0	1	1	0	86	68	188
AG	50	Ashe County	3	1	1	0	0	0	1	1	2	0	234	205	448
AG	60	Avery County	0	0	0	0	0	0	0	0	1	0	105	101	207
AG	70	Beaufort County	1	2	73	51	9	5	0	0	2	2	396	324	865
AG	80	Bertie County	0	1	140	88	1	0	0	2	1	5	60	41	339
AG	90	Bladen County	0	1	25	31	0	0	0	2	1	0	146	133	339
AG	100	Brunswick County	2	0	41	19	4	3	2	1	7	1	356	260	696
AG	110	Buncombe County	19	29	19	27	16	18	7	5	17	17	1567	1518	3259
AG	111	Asheville City	4	5	45	40	11	7	0	0	11	10	330	302	765
AG	120	Burke County	27	17	17	11	9	5	1	0	9	3	766	682	1547
AG	12A	The New Dimensions Sch	0	0	0	0	0	0	0	0	0	0	3	2	5
AG	130	Cabarrus County	46	33	111	63	34	18	6	3	23	21	2011	1657	4026
AG	132	Kannapolis City	5	3	58	31	14	15	1	0	6	5	260	215	613
AG	140	Caldwell County	8	8	17	6	10	5	0	0	10	3	768	582	1417
AG	150	Camden County	0	0	6	6	0	1	0	0	0	0	79	64	156
AG	160	Carteret County	5	4	22	13	5	2	0	2	7	4	468	459	991
AG	170	Caswell County	0	0	65	30	2	1	0	1	2	4	146	98	349
AG	180	Catawba County	20	27	13	14	8	8	2	1	6	8	709	744	1560
AG	181	Hickory City	8	11	24	8	2	2	0	0	5	4	303	278	645
AG	182	Newton Conover City	6	5	9	8	5	3	0	0	2	1	130	123	292

AG	190	Chatham County	3	3	50	27	14	13	0	0	6	8	386	397	907
AG	200	Cherokee County	1	2	0	1	4	0	3	4	2	2	245	159	423
AG	210	Edenton/Chowan	1	2	19	14	2	0	0	0	0	2	103	79	222
AG	220	Clay County	0	0	0	0	0	0	0	0	0	0	14	20	34
AG	230	Cleveland County	0	4	56	39	1	3	0	1	7	5	593	579	1288
AG	231	Kings Mountain	8	11	26	17	3	6	0	1	4	5	257	227	565
AG	232	Shelby City	5	4	95	92	3	1	0	0	6	7	283	291	787
AG	240	Columbus County	0	0	47	25	5	4	7	6	1	0	277	198	570
AG	241	Whiteville City	0	0	29	16	0	3	0	0	4	1	143	119	315
AG	250	Craven County	9	11	103	77	14	9	2	0	19	13	690	577	1524
AG	260	Cumberland County	77	78	398	283	84	69	13	20	50	51	1379	1201	3703
AG	270	Currituck County	2	0	2	7	1	1	0	2	4	3	167	159	348
AG	280	Dare County	1	1	3	0	3	1	0	1	1	4	230	209	454
AG	290	Davidson County	3	3	5	4	5	3	2	1	3	2	699	578	1308
AG	291	Lexington City	15	5	49	44	6	11	0	0	6	10	90	78	314
AG	292	Thomasville City	1	2	19	22	2	4	0	0	3	4	45	49	151
AG	300	Davie County	2	1	7	15	4	5	1	0	4	3	461	420	923
AG	310	Duplin County	0	1	60	46	14	26	0	0	0	1	312	249	709
AG	320	Durham County	73	75	583	419	36	35	5	2	63	53	1140	1076	3560
AG	32D	Kestrel Heights	0	0	1	0	0	0	0	0	0	0	3	5	9
AG	330	Edgecombe County	0	0	100	54	5	1	0	0	1	0	178	139	478
AG	340	Forsyth County	51	49	174	125	19	32	4	1	50	38	2170	2043	4756
AG	34C	Downtown Middle	0	0	1	0	0	0	0	0	0	0	6	1	8
AG	350	Franklin County	2	2	64	42	4	6	2	0	7	2	316	281	728
AG	35A	A Child's Garden	0	0	0	0	0	0	0	0	0	0	5	5	10
AG	360	Gaston County	44	45	131	80	24	20	3	3	13	12	1893	1712	3980
AG	370	Gates County	0	0	20	13	0	0	0	0	0	1	66	65	165
AG	380	Graham County	0	0	0	0	0	1	2	1	0	0	26	24	54

AG	390	Granville County	3	2	78	37	8	8	1	0	5	1	331	296	770
AG	400	Greene County	0	1	17	23	1	1	0	0	0	1	88	94	226
AG	410	Guilford County	185	160	686	563	59	53	12	12	102	105	3547	3111	8595
AG	41A	Imani Institute	0	0	1	1	0	0	0	0	0	0	0	0	2
AG	41D	Phoenix Academy	0	0	1	0	0	0	0	0	1	1	7	7	17
AG	420	Halifax County	0	1	154	118	1	1	16	15	1	1	18	17	343
AG	421	Roanoke Rapids City	8	9	20	8	2	3	1	0	0	0	190	191	432
AG	422	Weldon City	0	1	12	6	0	0	0	0	0	0	1	2	22
AG	430	Harnett County	6	1	38	26	5	11	0	5	6	10	475	448	1031
AG	440	Haywood County	4	0	1	2	3	4	2	0	2	4	391	329	742
AG	450	Henderson County	2	6	0	2	6	8	0	0	2	3	303	325	657
AG	460	Hertford County	1	1	166	83	2	0	0	1	1	3	72	79	409
AG	470	Hoke County	5	4	55	32	7	11	17	14	12	3	93	105	358
AG	480	Hyde County	0	0	6	4	0	0	0	0	0	0	29	23	62
AG	490	Iredell-Statesville	19	7	23	16	12	4	0	1	3	2	741	682	1510
AG	491	Mooresville City	3	6	5	1	0	2	0	0	1	0	188	150	356
AG	500	Jackson County	2	1	0	0	0	1	8	7	0	0	164	141	324
AG	50A	Summit Charter	0	0	0	0	0	0	0	0	0	0	12	10	22
AG	510	Johnston County	5	9	105	83	37	39	2	8	25	18	1499	1407	3237
AG	520	Jones County	1	0	10	4	1	0	0	0	0	0	20	18	54
AG	530	Lee County	11	11	82	38	36	34	3	1	13	5	614	498	1346
AG	540	Lenoir County	5	3	132	109	4	5	0	0	5	5	430	387	1085
AG	550	Lincoln County	1	2	3	7	4	6	3	1	4	4	367	316	718
AG	560	Macon County	0	2	0	1	1	0	0	0	0	1	169	137	311
AG	570	Madison County	0	0	0	0	0	0	0	0	0	0	139	124	263
AG	580	Martin County	1	0	57	56	0	3	0	0	0	2	205	167	491
AG	590	McDowell County	2	6	9	4	5	6	1	0	1	0	330	295	659
AG	600	Charlotte-Mecklenburg	364	316	1189	928	126	136	11	16	82	56	5539	5290	14053

AG	60F	Metrolina Reg Scholars	7	10	9	10	2	4	0	0	1	0	28	49	120
AG	610	Mitchell County	0	0	0	1	1	3	0	0	0	0	177	172	354
AG	620	Montgomery County	8	13	18	23	16	15	0	1	1	1	222	176	494
AG	630	Moore County	9	8	49	29	4	6	3	2	13	8	670	529	1330
AG	640	Nash-Rocky Mount	12	11	165	132	5	5	0	2	3	2	513	502	1352
AG	650	New Hanover County	46	48	285	162	19	11	8	8	49	39	2311	1946	4932
AG	660	Northampton County	0	0	77	65	0	0	1	0	2	0	58	66	269
AG	66A	Gaston College Prep	0	0	6	4	0	0	0	0	0	0	1	0	11
AG	670	Onslow County	17	11	54	48	16	18	4	6	30	15	549	470	1238
AG	680	Orange County	6	4	42	28	4	4	1	3	10	6	441	371	920
AG	681	Chapel Hill-Carrboro	232	218	89	60	29	28	5	4	57	65	1377	1306	3470
AG	690	Pamlico County	2	0	17	19	0	0	1	1	1	0	113	106	260
AG	69A	Arapahoe Charter	0	1	0	0	1	0	0	0	0	0	29	30	61
AG	700	Pasquotank County	0	6	43	29	2	1	0	0	1	1	192	124	399
AG	710	Pender County	0	1	37	30	2	6	1	3	3	0	249	236	568
AG	720	Perquimans County	0	0	1	2	0	0	0	0	0	0	17	13	33
AG	730	Person County	2	1	62	47	3	3	1	0	1	2	279	237	638
AG	740	Pitt County	14	10	60	39	6	6	1	4	6	9	559	503	1217
AG	750	Polk County	1	0	1	3	0	0	0	0	0	2	107	100	214
AG	760	Randolph County	2	5	3	4	6	9	2	1	3	2	518	516	1071
AG	761	Asheboro City	11	7	13	5	17	14	0	0	2	4	245	254	572
AG	770	Richmond County	6	10	100	46	10	7	5	7	4	0	425	375	995
AG	780	Robeson County	9	13	147	124	8	11	320	238	9	4	384	362	1629
AG	790	Rockingham County	6	7	130	80	15	17	2	1	18	16	913	743	1948
AG	79A	Bethany Community	0	0	0	0	0	0	0	0	0	0	2	4	6
AG	800	Rowan-Salisbury	6	4	52	34	9	8	1	1	8	12	805	737	1677
AG	810	Rutherford County	7	2	11	6	1	3	0	0	1	3	361	346	741
AG	820	Sampson County	6	0	41	23	8	15	1	0	5	0	309	225	633

AG	821	Clinton City	2	3	28	23	2	5	3	3	3	0	118	125	315
AG	830	Scotland County	7	4	58	45	1	2	10	16	2	4	216	203	568
AG	840	Stanly County	7	10	34	27	6	4	2	0	4	4	661	591	1350
AG	850	Stokes County	0	0	8	3	1	1	0	0	3	0	251	263	530
AG	860	Surry County	0	1	2	2	2	5	0	1	1	1	254	226	495
AG	861	Elkin City	0	1	0	1	0	0	0	0	0	0	106	85	193
AG	862	Mount Airy City	1	1	6	0	1	0	0	0	0	1	133	104	247
AG	870	Swain County	0	0	0	0	2	2	3	11	0	0	53	42	113
AG	880	Transylvania County	2	3	4	4	1	0	0	1	1	3	178	196	393
AG	890	Tyrrell County	0	0	8	8	1	0	0	0	0	0	43	34	94
AG	900	Union County	17	17	60	30	22	25	1	1	14	6	1476	1283	2952
AG	910	Vance County	5	4	174	126	9	8	1	0	0	3	276	231	837
AG	920	Wake County	517	561	562	451	103	119	19	12	136	111	6859	7019	16469
AG	92B	Exploris	0	0	0	0	0	0	0	0	0	0	7	8	15
AG	92D	Magellan Charter	5	2	0	0	2	3	0	0	0	0	69	48	129
AG	92E	Sterling Montessori	0	0	1	0	0	0	0	0	0	0	0	0	1
AG	930	Warren County	0	0	56	37	0	1	4	5	4	0	48	34	189
AG	940	Washington County	0	0	28	20	0	0	0	0	2	1	50	41	142
AG	950	Watauga County	4	5	3	1	2	1	2	1	3	1	445	413	881
AG	960	Wayne County	10	7	128	84	10	6	1	1	11	6	519	426	1209
AG	970	Wilkes County	4	2	4	9	0	2	0	0	0	2	437	409	869
AG	980	Wilson County	4	7	57	44	6	4	0	0	1	1	281	301	706
AG	990	Yadkin County	1	1	7	3	5	9	0	2	0	0	370	296	694
AG	995	Yancey County	2	0	0	0	2	0	0	0	0	0	107	104	215
		Total	2099	2052	8436	6122	1087	1100	548	481	1065	888	63181	57603	144662

Appendix C. Percent of White and minority students enrolled in gifted education.

ID	County	Total Students	White	% white	AA,AI,HI	% AA,AI,HI	AIG Count	AIG (White)	% AIG White	AIG (AA, AI, HI)	% AIG AA,AI,HI
2	Alamance	21366	13083	61.23%	7994	37.41%	2137	1850	86.57%	208	9.73%
3	Alexander	5432	4705	86.62%	596	10.97%	457	428	93.65%	21	4.60%
4	Alleghany	1452	1325	91.25%	127	8.75%	189	186	98.41%	3	1.59%
5	Anson	4461	1525	34.19%	2875	64.45%	188	154	81.91%	32	17.02%
6	Ashe	3207	3061	95.45%	136	4.24%	448	439	97.99%	3	0.67%
7	Avery	2373	2286	96.33%	79	3.33%	207	206	99.52%	0	0.00%
8	Beaufort	7282	3878	53.25%	3378	46.39%	865	720	83.24%	138	15.95%
9	Bertie	3486	496	14.23%	2985	85.63%	339	101	29.79%	231	68.14%
10	Bladen	5671	2527	44.56%	3137	55.32%	339	279	82.30%	58	17.11%
11	Brunswick	10,613	7624	71.84%	2966	27.95%	696	616	88.51%	70	10.06%
12	Buncombe	24655	21451	87.00%	3017	12.24%	3259	3085	94.66%	92	2.82%
13	Asheville City	3920	1991	50.79%	1902	48.52%	765	632	82.61%	103	13.46%
14	Burke	14658	11473	78.27%	1849	12.61%	1547	1448	93.60%	43	2.78%
15	Cabarrus	20896	15913	76.15%	4735	22.66%	4026	3668	91.11%	235	5.84%
16	Kannapolis City	4396	2377	54.07%	1953	44.43%	613	475	77.49%	119	19.41%
17	Caldwell	12733	11152	87.58%	1485	11.66%	1417	1350	95.27%	38	2.68%
18	Camden	1396	1139	81.59%	243	17.41%	156	143	91.67%	13	8.33%
19	Carteret	8151	6988	85.73%	1106	13.57%	991	927	93.54%	47	4.74%
20	Caswell	3506	1857	52.97%	1640	46.78%	349	244	69.91%	99	28.37%
21	Catawba	16580	13081	78.90%	2291	13.82%	1560	1453	93.14%	46	2.95%
22	Hickory City	4395	2297	52.26%	1721	39.16%	645	581	90.08%	36	5.58%
23	Newton-Conover City	2798	1700	60.76%	891	31.84%	292	253	86.64%	25	8.56%
24	Chatham	7252	4367	60.22%	2840	39.16%	907	783	86.33%	104	11.47%
25	Cherokee	3612	3373	93.38%	220	6.09%	423	404	95.51%	12	2.84%
26	Edenton/Chowan	2502	1236	49.40%	1265	50.56%	222	182	81.98%	35	15.77%
27	Clay	1246	1209	97.03%	30	2.41%	34	34	100.00%	0	0.00%
28	Cleveland	9602	7006	72.96%	2574	26.81%	1288	1172	90.99%	100	7.76%
29	Kings Mountain	4665	3371	72.26%	1199	25.70%	565	484	85.66%	53	9.38%
30	Shelby City	3211	1274	39.68%	1922	59.86%	787	574	72.94%	191	24.27%

ID	County	Total Students	White	% White	AA,AI,HI	% AA,AI,HI	AIG Count	AIG (White)	% AIG White	AIG (AA,AI,HI)	% AIG (AA,AI,HI)
31	Columbus	7062	3578	50.67%	3481	49.29%	570	475	83.33%	94	16.49%
32	Whiteville City	2703	1373	50.80%	1322	48.91%	315	262	83.17%	48	15.24%
33	Craven	14515	8579	59.10%	5794	39.92%	1524	1267	83.14%	205	13.45%
34	Cumberland	52043	21501	41.31%	29680	57.03%	3703	2580	69.67%	867	23.41%
35	Currituck	3427	2999	87.51%	413	12.05%	348	326	93.68%	13	3.74%
36	Dare	4723	4312	91.30%	393	8.32%	454	439	96.70%	8	1.76%
37	Davidson	19187	18148	94.58%	910	4.74%	1308	1277	97.63%	20	1.53%
38	Lexington City	3224	947	29.37%	2098	65.07%	314	168	53.50%	110	35.03%
39	Thomasville City	2480	851	34.31%	1612	65.00%	151	94	62.25%	47	31.13%
40	Davie	5948	4997	84.01%	933	15.69%	923	881	95.45%	32	3.47%
41	Duplin	8722	3976	45.59%	4735	54.29%	709	561	79.13%	146	20.59%
42	Durham	30584	8962	29.30%	20902	68.34%	3560	2216	62.25%	1080	30.34%
43	Edgecombe	7643	2913	38.11%	4711	61.64%	478	317	66.32%	160	33.47%
44	Forsyth	46401	23797	51.29%	22029	47.48%	4756	4213	88.58%	355	7.46%
45	Franklin	7914	4208	53.17%	3670	46.37%	728	597	82.01%	118	16.21%
46	Gaston	30857	22870	74.12%	7562	24.51%	3980	3605	90.58%	261	6.56%
47	Gates	1981	1112	56.13%	859	43.36%	165	131	79.39%	33	20.00%
48	Graham	1170	1033	88.29%	136	11.62%	54	50	92.59%	4	7.41%
49	Granville	8548	4696	54.94%	3813	44.61%	770	627	81.43%	132	17.14%
50	Greene	3195	1140	35.68%	2046	64.04%	226	182	80.53%	42	18.58%
51	Guilford	64699	30506	47.15%	31442	48.60%	8595	6658	77.46%	1385	16.11%
52	Halifax	5674	323	5.69%	5348	94.25%	343	35	10.20%	305	88.92%
53	Roanoke Rapids City	3065	2274	74.19%	746	24.34%	432	381	88.19%	34	7.87%
54	Weldon City	1072	28	2.61%	1042	97.20%	22	3	13.64%	18	81.82%
55	Harnett	16703	9705	58.10%	6930	41.49%	1031	923	89.52%	85	8.24%
56	Haywood	7836	7422	94.72%	389	4.96%	742	720	97.04%	12	1.62%
57	Henderson	11987	9882	82.44%	1996	16.65%	657	628	95.59%	16	2.44%
58	Hertford	3789	648	17.10%	3119	82.32%	409	151	36.92%	252	61.61%
59	Hoke	6295	1890	30.02%	4350	69.10%	358	198	55.31%	136	37.99%

ID	County	Total Students	White	% White	AA,AI,HI	% AA,AI,HI	AIG Count	AIG (White)	% AIG White	AIG (AA,AI,HI)	% AIG (AA,AI,HI)
60	Hyde	681	329	48.31%	352	51.69%	62	52	83.87%	10	16.13%
61	Iredell-Statesville	18464	13558	73.43%	4421	23.94%	1510	1423	94.24%	56	3.71%
62	Mooresville City	4206	3248	77.22%	883	20.99%	356	338	94.94%	8	2.25%
63	Jackson	3636	3092	85.04%	517	14.22%	324	305	94.14%	16	4.94%
64	Johnston	23484	15708	66.89%	7689	32.74%	3237	2906	89.77%	274	8.46%
65	Jones	1430	599	41.89%	829	57.97%	54	38	70.37%	15	27.78%
66	Lee	8949	4785	53.47%	4094	45.75%	1346	1112	82.62%	194	14.41%
67	Lenoir	10166	4436	43.64%	5685	55.92%	1085	817	75.30%	250	23.04%
68	Lincoln	11047	9065	82.06%	1937	17.53%	718	683	95.13%	24	3.34%
69	Macon	4117	3888	94.44%	201	4.88%	311	306	98.39%	2	0.64%
70	Madison	2562	2509	97.93%	50	1.95%	263	263	100.00%	0	0.00%
71	Martin	4539	1893	41.71%	2637	58.10%	491	372	75.76%	116	23.63%
72	McDowell	6517	5773	88.58%	628	9.64%	659	625	94.84%	25	3.79%
73	Mecklenberg	109594	47475	43.32%	57387	52.36%	14053	10829	77.06%	2406	17.12%
74	Mitchell	2356	2235	94.86%	118	5.01%	354	349	98.59%	5	1.41%
75	Montgomery	4446	2279	51.26%	2042	45.93%	494	398	80.57%	73	14.78%
76	Moore	11404	7738	67.85%	3595	31.52%	1330	1199	90.15%	93	6.99%
77	Nash-Rocky Mount	18110	7129	39.36%	10780	59.53%	1352	1015	75.07%	309	22.86%
78	New Hanover	21858	14542	66.53%	7081	32.40%	4932	4257	86.31%	493	10.00%
79	North Hampton	3377	635	18.80%	2740	81.14%	269	124	46.10%	143	53.16%
80	Onslow	21537	13764	63.91%	7462	34.65%	1238	1019	82.31%	146	11.79%
81	Orange	6360	4515	70.99%	1799	28.29%	920	812	88.26%	82	8.91%
82	Chapel Hill-Carrboro	10360	6663	64.31%	2658	25.66%	3470	2683	77.32%	215	6.20%
83	Pamlico	1746	1121	64.20%	619	35.45%	260	219	84.23%	38	14.62%
84	Pasquotank	5951	2823	47.44%	3090	51.92%	399	316	79.20%	75	18.80%
85	Pender	6825	4379	64.16%	2433	35.65%	568	485	85.39%	79	13.91%
86	Perquimans	1715	1038	60.52%	675	39.36%	33	30	90.91%	3	9.09%
87	Person	5796	3352	57.83%	2431	41.94%	638	516	80.88%	116	18.18%
88	Pitt	20691	8963	43.32%	11470	55.43%	1217	1062	87.26%	116	9.53%
ID	County	Total	White	% White	AA,AI,HI	%	AIG	AIG	% AIG	AIG (AA,AI,HI)	% AIG

		Students				AA,AI,HI	Count	(White)	White		(AA,AI,HI)
89	Polk	2376	1995	83.96%	369	15.53%	214	207	96.73%	4	1.87%
90	Randolph	18078	15554	86.04%	2395	13.25%	1071	1034	96.55%	25	2.33%
91	Asheboro	4388	2507	57.13%	1765	40.22%	572	499	87.24%	49	8.57%
92	Richmond	8349	4401	52.71%	3878	46.45%	995	800	80.40%	175	17.59%
93	Robeson	23960	5070	21.16%	18808	78.50%	1629	746	45.79%	848	52.06%
94	Rockingham	14723	10020	68.06%	4644	31.54%	1948	1656	85.01%	245	12.58%
95	Rowan-Salisbury	20755	14517	69.94%	5695	27.44%	1677	1542	91.95%	105	6.26%
96	Rutherford	9982	7946	79.60%	1998	20.02%	741	707	95.41%	21	2.83%
97	Sampson	8044	4087	50.81%	3936	48.93%	633	534	84.36%	88	13.90%
98	Clinton City	2703	1046	38.70%	1633	60.41%	315	243	77.14%	64	20.32%
99	Scotland	6885	2693	39.11%	4142	60.16%	568	419	73.77%	132	23.24%
100	Stanley	9972	7559	75.80%	2016	20.22%	1350	1252	92.74%	73	5.41%
101	Stokes	7439	6817	91.64%	607	8.16%	530	514	96.98%	13	2.45%
102	Surry	8436	7058	83.67%	1310	15.53%	495	480	96.97%	12	2.42%
103	Elkin City	1130	925	81.86%	199	17.61%	193	191	98.96%	1	0.52%
104	Mount Airy City	1903	1427	74.99%	389	20.44%	247	237	95.95%	7	2.83%
105	Swain	1740	1325	76.15%	410	23.56%	113	95	84.07%	18	15.93%
106	Transylvania	3793	3424	90.27%	346	9.12%	393	374	95.17%	10	2.54%
107	Tyrrell	684	332	48.54%	350	51.17%	94	77	81.91%	17	18.09%
108	Union	25395	18864	74.28%	6322	24.89%	2952	2759	93.46%	139	4.71%
109	Vance	8252	2376	28.79%	5847	70.86%	837	507	60.57%	318	37.99%
110	Wake	104,478	62706	60.02%	37388	35.79%	16469	13878	84.27%	1266	7.69%
111	Warren	3183	608	19.10%	2571	80.77%	189	82	43.39%	103	54.50%
112	Washington	2221	552	24.85%	1665	74.97%	142	91	64.08%	48	33.80%
113	Watauga	4733	4525	95.61%	169	3.57%	881	656	74.46%	10	1.14%
114	Wayne	19030	9223	48.47%	9618	50.54%	1209	945	78.16%	230	19.02%
115	Wilkes	10142	8965	88.39%	1129	11.13%	869	846	97.35%	15	1.73%
116	Wilson	12199	4852	39.77%	7246	59.40%	706	582	82.44%	111	15.72%
117	Yadkin	5895	4928	83.60%	947	16.06%	694	666	95.97%	26	3.75%
118	Yancey	2509	2368	94.38%	134	5.34%	215	211	98.14%	2	0.93%

Appendix D. School system questionnaire on gifted education.

Definition of Giftedness

1. What areas of giftedness are recognized using your system's definition?
2. Is the potential of giftedness mentioned in the definition? How?
3. Are underserved populations mentioned in the definition?
4. What are the indicators of giftedness?

Screening/ Selection Process

5. What are the sources of nomination?
6. Does the county conduct broad based searches?
7. What are the top two instruments used to assess intelligence? aptitude?
8. Are alternative instruments are used to assess students from culturally different populations? Which ones?
9. What are the criteria for selection?
10. Are some indicators given more weight than others? If so, which ones?

Teacher Training

11. How many teachers are certified to teach gifted students?
12. How many hours are required for certification?
13. Are teachers trained to identify gifted behavior? How ?
14. Does the training specifically address culture differences in African American, Hispanic American and Native American populations?

Retention

15. Are there practices in place to address the retention of minority students who have been placed in gifted programs? If so, what are they?
16. Do you collect and analyze data on the retention of minority students? How?

Equity

17. Has the implementation of Article 9B had an impact on the number of minority students identified for gifted programs? How?

18. What factors have contributed to increases/decreases in minority representation since the implementation of Article 9B?

Appendix E. Interview Questions for North Carolina Gifted Education Coordinator.

January 12, 2004.

1. Is certification required in North Carolina to teach gifted students?
2. How many hours of training are required to teach gifted students?
3. Is there a recommended list of IQ assessment instruments in North Carolina? If so, what are they?
4. Is there a recommended list of alternative identification instruments for underserved populations?
5. Does North Carolina recommend possible sources of nomination?
6. Are systems required to assess all students at some point to generate a pool?
7. What factors are driving minority representation in gifted programs?